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ORIGINAL ARTICLES

THE VALUE OF THE ORTHODIAGRAPH *

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The Orthodiagraph is an instrument devised to determine the outline and area of the heart shadow accurately. It consists, essentially, of an X-ray tube, a fluoroscopic screen, and a writing point so attached to a rigid frame that the anode, the writing point, and a mark upon the screen lie in a straight line, but move together freely in a plane normal to this line. The mark upon the screen serves to pick out one certain ray from the divergent bundle arising from the anode. The pencil of rays so marked upon the screen may be used to trace the outline of the heart and other thoracic viscera, much as a bow-string, and every point on this line, as for example the writing point, will reproduce exactly the outline of the body circumscribed. In different instruments the writing point is variously placed, to write either directly upon the chest of the patient examined or upon a sheet of paper placed behind the patient. The former method has the advantage that slight movements on the part of the patient do not introduce a serious error, the latter provides a permanent record without further manipulations.

Machines of the latter type are equipped with a sliding rod which replaces the screen. By its use any mark on the surface of the body may be definitely located on the chart. The thoracic outline, the clavicles, the nipples, the apex beat, and the ensiform are generally used as landmarks. Percussion outlines are similarly transferred to the chart.

The writing point is operated by pressure on a bulb and the record consists of a series of dots which are subsequently connected by a pencil mark into a continuous line. The heart record is taken in the diastolic phase and the lung boundaries in quiet expiration. For an accurate record at least 75 points are required, outlining heart, the diaphragm and the pleural boundaries.

The advantage of the orthodiagraph over the ordinary Roentgenogram, or X-ray plate, lies in the use of parallel rays in the deliniation of the thoracic viscera. The Roentgenogram is made with divergent rays. As a result the shadow exceeds the size of the object in the proportion of their relative distances from the source of light.

The magnification of objects on the side of the body towards the source of light may be considerable, while those away from the light and in contact with the plate will be reproduced in their natural sizes. There results a considerable distortion and magnification of the heart shadow. To avoid this it is necessary to work with the subject at some little distance from the tube.

*Read before Michigan State Medical Society, September 15-16, 1909, at Kalamazoo.

With a powertul equipment it is possible to make a Roentgenogram at four feet, at which distance the magnification does not exceed 5 to 8 mm. at the edge of the plate and possibly 3 to 4 mm. at the left border of the heart.

In addition, the outlines of the Roentgenogram are not perfectly distinct. The minimum exposure on a favorable subject is about 3 seconds, and much oftener 7 to 10 seconds. This gives time for several heart beats. The orthodiagraph is free from this error and therefore the tube may be brought nearly into contact with the body, giving a satisfactory illumination with less current, causing less heating of the tube, and therefore allowing a longer observation.

Almost immediately there was a rush to apply the new method to verify and control the findings of ordinary percussion. A great difference of opinion existed as to the normal findings. It is probable that no two clinicians could agree on the right border of the heart, few could agree on the apex, and certainly none would attempt to estimate the actual area. Probably all would agree to the presence or absence of hypertrophy or dilatation. Every examiner had his own mental standard and his results were all relative. Such results could have no value as records because of the lack of uniformity.

Just how confused the matter was is perhaps best illustrated by this reproduction of a figure used by Moritz in one of his articles. (Fig.1.) It represents the orthodiagram of an adult Austrian soldier, and superimposed are the alleged normal percussion outlines as given in a number of text books on Physical Diagnosis of recent date. The right border of the deep cardiac dullness is placed at 5 different places by eight authorities. The left border is placed fairly uniformly at a point about one finger breadth within the nipple line, which the orthodiagram shows to be somewhat outside of the true border. This is due to the fact that percussion is practiced in a direction perpendicular to the surface of the chest. In other words, percussion gives us a radial projection of the thoracic viscera, while the orthodiagram is a rectographic projection, i. e., by parallel lines.

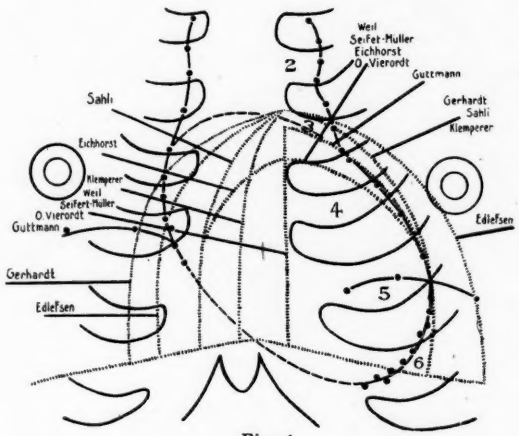

Fig. 1.

During the previous few years, three distinct forms of percussion technique had been developed, viz; "the threshold percussion" of Goldscheider, (2) using the minimum audible percussion stroke; the "tactile percussion" of Ebstein (3), depending altogether on the sense of resistance; and the modification of the ordinarily used method as elaborated by Moritz. Researches were carried out on cadavers to verify both percussion and orthodiagraphy with substantial agreement with all three styles.

Dietlen (4), publishes a remarkable series of results on 120 cases, mostly normal. The deep cardiac dullness was mapped out with the patient already in position on the stretcher of the orthodiagraph and then the orthodiagram was marked directly on the chest. A margin of 5 mm. (1-5 inch) in both directions was allowed, and a greater difference than this was considered a failure. In terms of per cents, the right border was correctly found in 86% of all

cases; the left in 70%; both borders in 50%; and both incorrectly in 12%. A later and larger series (5) gave practically the same results. It is worthy of note that the percentage of failures was greater in pathological than in normal hearts.

Moritz's technique is the one taught in the university as the easiest to acquire and the most certain of results. Its peculiarity lies in the character of the percussion stroke.

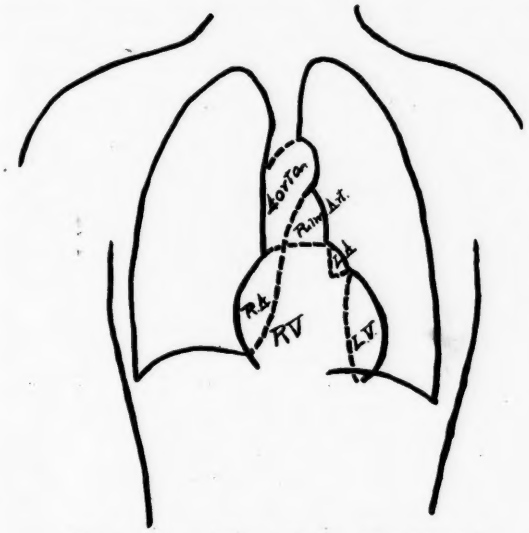

Fig. 2.—Normal Heart Shadow after Groedel.

For the deep structure, e.g., the right border of the heart and the dome of the diaphragm he recommends that the pleximeter finger be firmly applied, and a firm, well sustained stroke be delivered by the plessor. This is also used over the upper border on the left, in the region of the *conus arteriosus*. For the apex region the stroke must be considerably lighter to avoid the error due to the curvature of the chest wall. The lighter percussion is intended to allow for the difference between the radial and the vertical projections. Of course, this involves a mental (conscious or unconscious) correction for a variable quantity, and to just that degree departs from a truly objective method. In our opinion it is a mistake to attempt to make two figures of entirely different significance agree. It would seem better to obtain the outline and then make a conscious and deliberate correction.

In our hospital work we do not observe this difference in the force of the percussion stroke, since we believe it a distinct advantage that the physical signs should exaggerate the pathological condition. It is even possible to demonstrate a reduction in the area of dullness under treatment before there is any striking change in the orthodiagram.

In how far the judgment is influenced by the tactile, the muscle sense, or the auditory impressions, has been the subject of much speculation and not a few researches. An instrument has been devised to cause so loud a buzzing in the ears as to completely drown out the auditory impressions and the claim has been made that eminently satisfactory results are thus obtained. Moritz (6) however, failed to obtain as

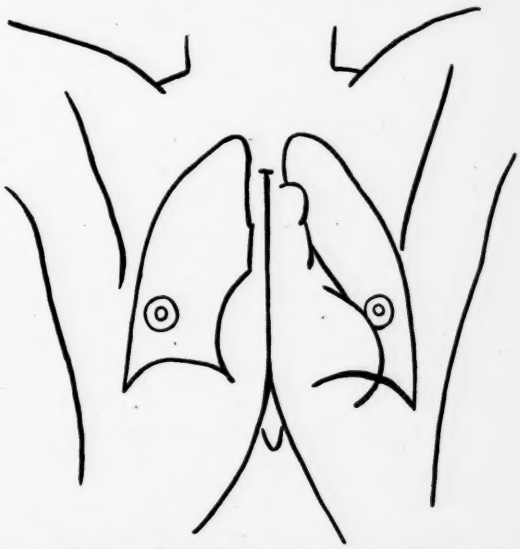

Fig. 3.—Mitral Regurgitation Compensated.

sharp a differentiation in the presence of the noise of a large static spark. It is very probable that there is a large personal factor in the matter.

Dietlen (5), a pupil of Moritz, has compiled the data from a large number of orthodiagrams obtained from normal in-

dividuals from the neighboring barracks. He gives the following averages:

	Males	Females
From the median line to the apex about	8.6	8.4
From the median line to the right border	4.2	3.7
Long diameter	14.2	13.2
Transverse diameter	10.2	12.2
Area (by planimeter)	115 sq. cm	1000

The area of the heart silhouette varies directly with the stature, and with the weight, to a less extent it depends upon the occupation of the individual. It increases slightly with age after 50, and at the same time descends lower in the thorax. This change of position, as well as the change of axis accompanying that change, may be sufficient to conceal any enlargement.

Fig. 4.—Mitral Stenosis. Some loss of Compensation.

There is a large individual variation in the area of the heart silhouette which cannot be explained by any of the above factors. The maximum range in the above series is from 91 to 149 sq. cm. in the adult males.

Schott, of Neuheim, has long maintained that exercise may lead to a dilatation of the heart. In several communications previous to 1896 he reported the results of a series of experiments on wrestlers to determine the effect of strenuous exercise, arguing that an acute dilatation was easily produced. After twenty minutes of continuous wrestling he was able to demonstrate by the usual method of percussion a marked enlargement of the deep cardiac dullness. These results he ascribed to the effects of the resulting dyspnoea. To exaggerate this he confined the lower part of the thorax by a heavy leather belt, and showed to his own satisfaction that the enlargement was thereby increased.

Moritz (4) attempted to verify these

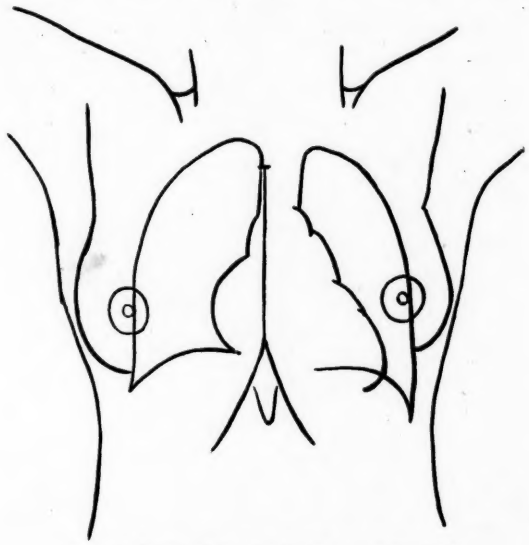

Fig. 5.—Mitral Regurgitation and Stenosis. Well Compensated.

results and found the contrary to be the rule. The effect of such mild exertion as taking 10 deep breaths or raising the feet above the head as a patient lay on the stretcher was immediately shown in a slight but easily demonstrable reduction of the orthodiagram. This reduction was a very fleeting effect.

Later (7) he took advantage of a bicycle race from Leipzig to Strassburg. The contestants were examined immediately before the start by an assistant, and at the conclusion of the race were hurried in carriages to the X-ray room and again orthodiagraphed. The time since stepping from their wheel did not exceed a few minutes.

In all the pulse and respiration rates were much accelerated, several were extremely dyspnœic and all were freely perspiring. In no case was a dilatation present, on the contrary, in every case there was a reduction of the cardiac area. This persisted

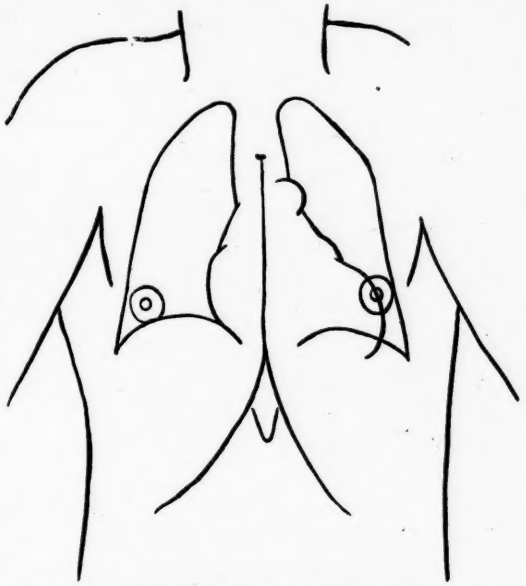

Fig. 6.—Aortic Regurgitation and Mitral Regurgitation. Compensated.

for several days until the contestants were lost sight of, except one case, which was observed for more than two months, during which time his heart never regained its former size. It must not be forgotten that no record was possible in the cases of those who failed to finish the race, and it is not impossible that an acute dilatation was the cause of their disability.

A similar fate awaited the contention of Smith (8) that a hot bath had caused an increase in the relative cardiac dullness to nearly double the original, as determined by auscultatory percussion. Moritz (4) on repeating the experiment failed to find any change after 25 minutes in a hot tub, although the face was flushed and the pulse was full and bounding.

Particular interest attaches to the analysis of the shadow of the left border of the heart. (9) On the fluoroscopic screen, four broad curves may be seen in favorable cases, corresponding to the four anatomical divisions making up the left margin. These are, in their order from above downward, the arch of the aorta, the conus arteriosus, the left auricle and the left ventricle. In a certain number of cases it is the hypertrophied right ventricle which is seen instead of the left and the normal left auricle does not present on the left border. These divisions can not be made out on the Roentgenogram because of the motion of the heart during the exposure. On the screen the movements of adjacent parts is seen to be in opposite directions, making it comparatively easy (especially with dilatation of the left auricle) to find the node marking the junction of auricle and ventricle or auricle and pulmonary artery. A relative prominence of any part may therefore be interpreted as evidence of hypertrophy or dilatation.

The attempt has been made to utilize these principles in the diagnosis of the

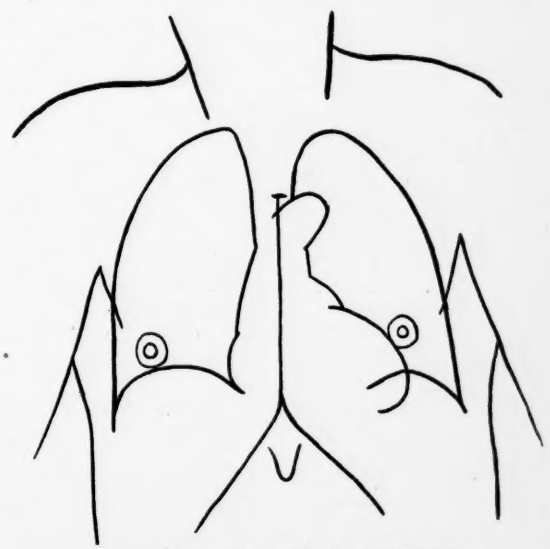

Fig. 7.—Arteriosclerosis. Angina Pectoris.

various valvular lesions, with some degree of success. For instance, in Aortic Insufficiency there is found an increase in the first and fourth of these components, as an indication of the dilation of the arch

of the aorta and the hypertrophy of the left ventricle. This result is what has been termed the "snub-nosed heart, or stumpf-nasiges hertz" which is fairly typical of this lesion when uncomplicated. In Mitral disease, on the other hand, the second and third are found enlarged, representing the dilatation of the left auricle and pulmonary artery. The effect is to change the curve of the left border from a concave to a convex line. In addition the right border is thrown out, thereby increasing still more the transverse diameter, and making the general outline more nearly circular; the so-called

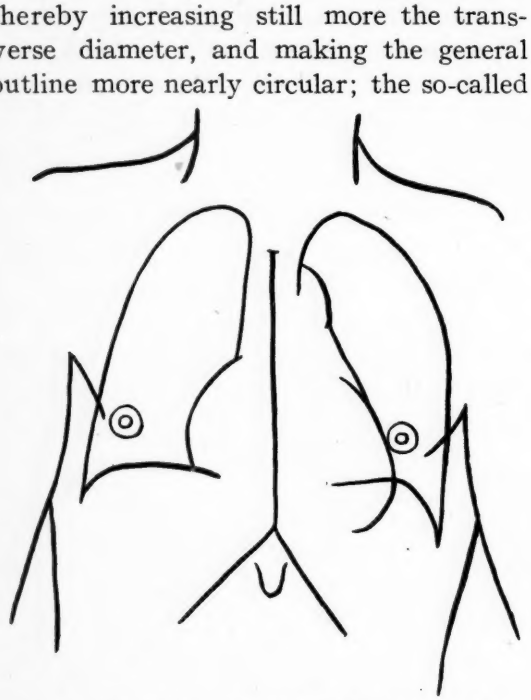

Fig. 8.—Chronic Parenchym. Nephritis. Relative Mitral Regurgitation.

"kügelformiges hertz." Unfortunately, pure and uncomplicated lesions are rare and usually offer little difficulty to diagnosis, and the end stages of all lesions is a general enlargement of all the chambers resulting in the round or "kügelformiges" silhouette.

Aneurism of the arch is also very well shown, and the extent of the dilatation may be very accurately measured. For the diagnosis of this condition we prefer the use of a larger fluoroscopic screen as it allows the examiner to rotate his patient during the observation, which usually gives a very simple and convincing demonstration of the position of the tumor.

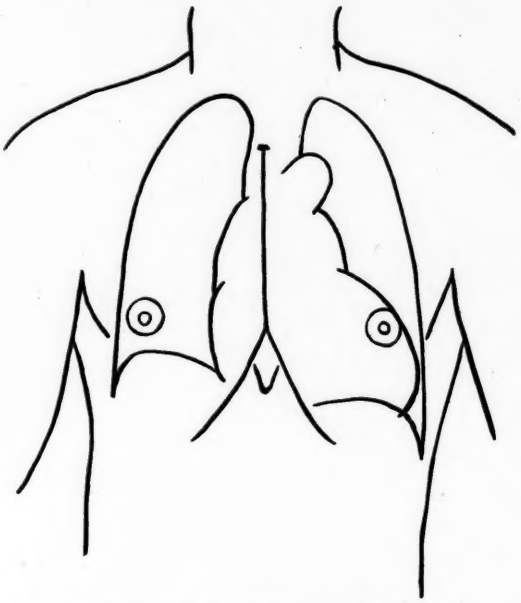

Fig. 9.—Chronic Interstitial Nephritis with signs of Aortic Regurgitation.

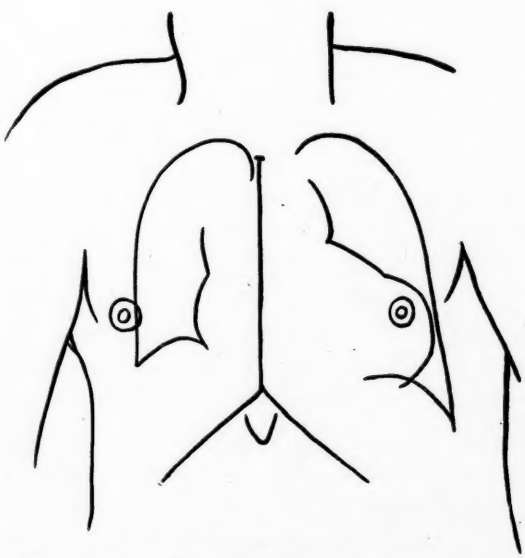

Fig. 10.—Chronic Interstitial Nephritis. Myocardial Insufficiency. No Murmur.

Orthodiagraphy in a transverse direction offers technical difficulties, and is little practiced. If a satisfactory illumina-

tion were possible, it would be invaluable in the location of an aneurism.

The application of the orthodiagraph to determine the location of foreign bodies in the thorax has not received the attention it deserves. The difficulty of illumination in the transverse direction for the short time necessary to locate an opaque body does not seem insurmountable.

In conclusion let me say that the chief value of the Orthodiagraph has been and will be as a check on the percussion technique of teacher and pupil. It has done more than anything else to arouse the profession to the gross errors of deep percussion as ordinarily practiced and the feasibility of accurate percussion. The possibility of an accurate and reliable check on the work of a beginner is an invaluable stimulus. Its value in the diagnosis of the valvular lesions is considerable but has probably been exaggerated. Its use in the scientific investigation of the results of treatment of heart conditions promises much in the future. The influence of attitude, compression, or other pathology in the thorax has already given us much useful information which can not be enumerated here.

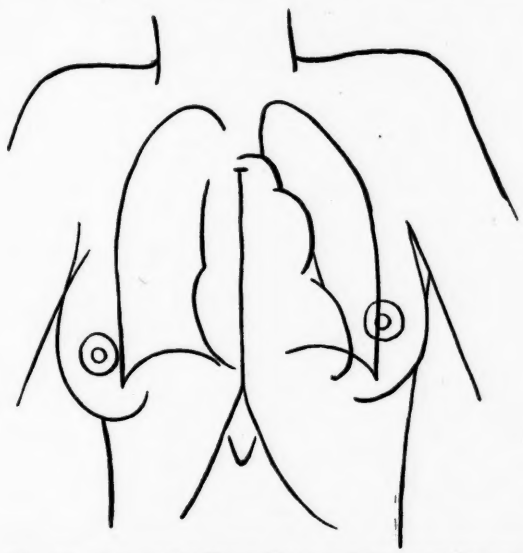

Fig. 11.—Congenital Heart Disease, Pulmonary Stenosis and Patent Ductus Arteriosus.

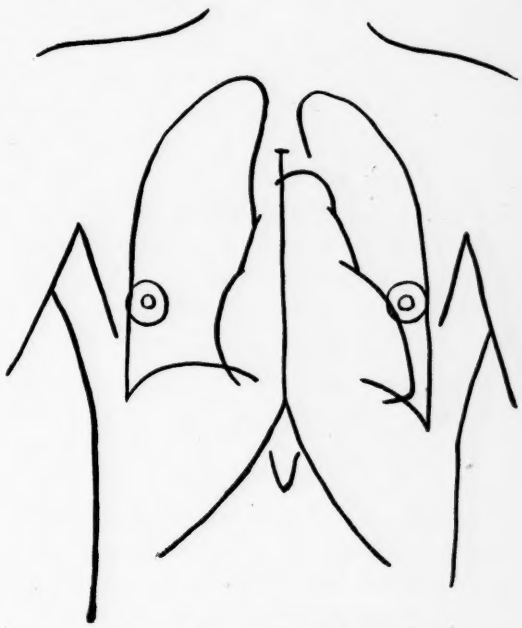

Fig. 12.—Patent Ductus Arteriosus

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PLACENTA PREVIA*

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Among the many accidents that may befall the pregnant woman, Placenta Previa is by no means the least. It is a condition demanding on the part of the patient courage and fortitude, and at the hands of the obstetrician coolness, judgment and dexterity.

There will always be one of three conditions present in any given case of Placenta Previa which demand our decision before we can proceed intelligently and conscienciously, viz:

1. What shall be done during pregnancy for the bleeding before labor has begun?

2. What shall be done when labor has apparently begun, but the cervix is still too narrow and hard to permit of active interference?

3. What shall be done in a case where labor is unquestionably under way, the cervix dilating or dilatable, and a dangerous hemorrhage sets in?

As to the first: Not every hemorrhage during pregnancy is due to Placenta Previa; therefore, for the purpose under discussion, it is pre-supposed that the diagnosis is unquestioned. Palliative treatment may be tried if the hemorrhage is slight, especially if the child is not viable. Let us never forget, however, that the life of the child in Placenta Previa stands over against and in opposition to that of the mother; and, therefore, any and all measures calculated to increase the chances of the life of the child, in just that proportion decreases that of the mother's.

Palliative treatment consists in keeping the patient at rest—absolute rest; and to attain this she should be under an opiate. The diet should be carefully regulated and the bowels move only gently and with the least disturbance possible. Hemostatic drugs are worse than useless and should have no place in the thoughts of the obstetrician.

In hospital practice one has a far better chance to tide the patient over than in private practice, for in the former, the patient is constantly under trained observation; while in the latter, she is really under no observation at all. In all such cases, therefore, the patient's friends must be thoroughly impressed that should the bleeding recur the obstetrician must be at once notified. However, personally I am of the opinion that as soon as Placenta Previa is diagnosed the woman is never safe, and that if we take the mother's life into account as being paramount to that of the unborn non-viable child, it becomes our duty to at once interrupt pregnancy and empty the uterus.

As to the second and third conditions named, the objects to be attained will be, 1st. Check the hemorrhage; 2nd. Dilate the cervix; 3rd. Deliver the child.

The second condition, where the cervix is not dilated and hard: This is one of the prime obstetrical indications, if not the only obstetrical indication, for Cesarean section—both vaginal and classical. We are discussing the management of Placenta Previa before general practitioners who are not abdominal surgeons; therefore, for the moment, we confine our-

*Read before the Michigan State Medical Society, at Kalamazoo, Sept. 15 and 16, 1909.

selves to the purely obstetrical treatment.

Plug the cervix as much as may be and the vagina. Use gauze. Do not attempt to place a tampon in this most serious condition with the patient in bed, for it simply cannot be done properly.

The patient should be removed from the bed to a table and an anæsthetic administered if necessary. Only under such conditions can the cervix and vagina be thoroughly and properly tamponed. If the tampon has been applied as indicated, it will control the hemorrhage and will set up uterine pains. I said that if the tampon is properly inserted the bleeding will stop; and yet there are cases where the bleeding continues in a concealed form—separating or lifting off, as it were, the placenta from its attachments. Therefore, the patient must be watched. Do not allow the tampon to remain in more than say six or eight hours. On its removal, in the vast majority of cases, it will be found that two fingers can be easily introduced into the os, and bi-polar version after the Braxton-Hicks method can be performed and a leg brought down, which will act as the very best plug for the hemorrhage and dilator for the cervix. Let the pains expel the breech. Do not be in too great a hurry to deliver the head. Should the cervix grasp the head, which will not be unlikely, do not drag it through, for in so doing you will most likely tear the cervix and lose the mother from uncontrollable hemorrhage. A torn cervix in Placenta Previa is by no means a simple thing. Remove the placenta immediately if it does not come away. Remember that the placenta sinuses are in the lower uterine segment and do not participate in the contraction or retraction of the uterus. Do not hesitate to firmly plug the whole uterine cavity. Always stitch the torn cervix if possible. Plug the cervix and vagina as well as the uterine cavity. The death rate from postpartum hemorrhage in those cases is very high.

As regards the third condition, viz: When labor is under way and the os is dilated or dilatable. Of course in those cases we should not use the tampon, but proceed with more active measures. In this condition we shall find the very best method that of Braxton-Hicks; and in this condition we shall find the version a much easier procedure than in the former condition. As soon as version is complete rupture the membranes and grasp a foot and deliver it, so that it will effectually plug the os. The case may then be left to nature, observing the preceeding cautions. Of course if the placenta be marginal or central it will be necessary to separate the placenta by a sweep of the fingers round between the uterus and the placenta as far as one can reach. In most cases we shall feel the smooth membranes, and through them feel and identify the presenting part; then with the other hand externally bi-polar version may be performed, the membranes ruptured, and a foot brought down as before stated.

After this has been accomplished, do not pull on the foot unless there is hemorrhage—leave the case as much as possible to nature. In most cases the uterine contractions will force down the presenting part sufficiently to arrest all hemorrhage. Should the edge of the placenta not be reached after separating it as much as possible, do not hesitate to perforate the placenta and do a bi-polar version. It will be found by far more difficult to do than under the former conditions; therefore, do not resort to it until former methods have failed.

Always deliver slowly; any attempts at rapid delivery will be followed by a high maternal death rate.

So far as the mother is concerned there can be no question, it seems to me, that

the far greater safety for her lies in bi-polar version. The great debatable feature about version is the very high fœtal mortality. It is due to this fact, and this fact alone, that methods other than version have been advocated.

The use of de Ribes bag finds many advocates. For its employment the patient should be anæsthetized and placed in the lithotomy position; rupture the membranes, grasp the bag with a pair of long forceps and carry it through the os into the uterus. Oftentimes carrying it out on the fingers will be found easier. The bag is then filled with water. The patient is replaced in bed. The bag is allowed to be expelled by the natural forces, when we can apply forceps or turn and deliver. It will take all the way from six to twelve hours for the expulsion of the bag. There can be no question, it would seem to me, but that the careful and intelligent use of de Ribes bag will do much to lessen the infant mortality in Placenta Previa. Accouchment Forcé should be abolished in the treatment of Placenta Previa; therefore, I mention the Bossi Dilator only to condemn it. We believe that Accouchment Forcé should be condemned because it is an unnecessary procedure; because it is dangerous on account of hemorrhage; because it may and is exceedingly likely to cause rupture of the cervix that may extend well up into the lower uterine segment. In treating Placenta Previa do not forget that the os cannot be dilated in less than one-half to three-quarters of an hour; therefore, do not hurry. It is a curious fact, and one difficult to explain, that the method most frequently employed in this condition is not de Ribes bag or Braxton-Hicks bi-polar version, but Accouchment Forcé. The former are thought to be difficult of performance, whereas, they are not; yet we grant they must be accompanied by the gentility of obstetrical touch. Always pack the uterus after emptying it, paying particular attention to the lower uterine segment. A wise precaution is to apply heat to the cerebellum. A danger to be guarded against is pulmonary embolism.

It is about twenty years ago since the brilliant surgeon, Lawson Tait, suggested Cesarean section for Placenta Previa. Tait at that time placed the mortality from this condition at 50%, which was by no means correct. The great strides made during the past few years in abdominal surgery have led many general surgeons to the realm of obstetrics, and in consequence the domain of Cesarean section is continually widening. There is today a respectable company who advocate this method either in carefully selected cases, or indiscriminately in all cases, as the one most calculated to wipe out the large fœtal mortality and materially lessen the maternal. However, it would seem to me that in the discussion of this phase of the subject that is now claiming so much of our attention, that the general surgeon has failed utterly to take into account his own personal obstetrical limitations. He is constantly looking out of surgical instead of obstetrical eyes. The maternal mortality treated obstetrically is perhaps not far from three to six per cent; while cases of Cesarean section gives us one not far from twenty per cent for all cases.

Placenta Previa Centralis is recognized as being one of the indications for Cesarean section; yet, when we realize that in this variety we shall nearly always be called upon to interfere before the child is viable, it is not easy to see the advantages gained to the child. There can be no question that given a rigid os or a pelvic deformity, section would be the proper method. Rigidity of the os is by no means frequently met in Placenta Previa. Deaver says it is "A condition not so rare in Placenta Previa as has been generally supposed by some

authors." Yet DeLee has met only four cases; Newell, two; McLean, but one. The following obstetricians quoted by Fry have never met a case of rigid and undilatable os in Placenta Previa, viz: Norris, Williams, Grandin, Peterson, Davis and Reynolds.

In Placenta Previa Centralis we believe the Cesarean section is indicated, as it is generally considered about six times more dangerous to the mother if treated obstetrically than in the other varieties; while the danger should be but slightly increased if treated with Cesarean section. That Cesarean section is a justifiable method of treatment in Placenta Previa under proper indications, no one can doubt, but that those indications are rare, is equally true. Besides the indications given there must be more for the carrying out of this treatment, viz: The operator must be able to cope with the conditions. He must be an abdominal surgeon; must have capable assistance; the patient, if possible, being in a hospital. If these conditions cannot be had the woman will be safer if left to obstetrical treatment as has already been indicated. We do not see that Vaginal Cesarean section is indicated in this condition, except in very rare instances.

THE ENORMOUS WASTE OF HUMAN LIFE*

MR. GEORGE H. CUNNINGHAM

Field Secretary Provident Savings Life Assurance Society

The matters which I shall present to you tonight possess an unusual interest, not only because of their importance, but because they will come as news to the average man, who has neither the time nor the inclination to dig very far into public records for information.

The purpose of this lecture is to assist in the general campaign of education for Disease Prevention which is being urged by various public men and organizations devoted to the improvement of health.

We will show on the one hand the splendid achievements of science, civilization and preventive medicine in the saving of your lives. On the other hand we will show that not only has our civilization developed along lines which have reduced the vitality of the middle aged and the elderly, but that science, with strange blindness, has failed to grasp the force of these tendencies and to organize the necessary relief.

Nothing can be of greater importance to the nation than the lives of those who compose it, and life is of course the most valuable possession of the individual.

There are constantly seriously ill in this country over 3,000,000 people. One million and a half of them are sick from preventable disease.

Over 600,000 of these valuable lives are needlessly sacrificed every year in this country—needlessly, because this loss is due to causes that can be prevented by the application of ordinary and reasonable precautions.

These figures are given by Professor Irving Fisher, of Yale University, President of the Committee of One Hundred on National Health, who officially published them after a very careful investigation and after consulting a large number of doctors and eminent students of vital statistics.

*Read before the Detroit Academy of Medicine, March 22, 1910.

At first glance it is impossible to appreciate the magnitude of this enormous annual sacrifice of American life.

This death roll means the wiping out every year of a population larger than that of the city of San Francisco, of St. Louis, or Boston; a number more than twice as large as the city of Detroit; as a matter of fact larger than the combined population of all towns in Illinois, over 6,000 inhabitants, excepting Chicago; than the combined population of Detroit, Saginaw, Jackson, Grand Rapids, Kalamazoo, Ann Arbor, Port Huron, Muskegon, Bay City and West Bay City. It is a population larger than that in the entire States of Montana, Idaho and Wyoming combined; or of Utah, New Mexico and Arizona. It means that a population equal to a town of 1600 people is eliminated every day, and a village of 68 people destroyed every hour.

This enormous waste of human life excites no particular attention for two reasons. These deaths are scattered throughout a year and throughout our vast population, and their loss is charged to "natural causes."

It is not to alarm you, or to frighten you into considering this question of Disease Prevention that I mention these unpleasant things. Constant and needless worry over one's health is not at all in the line of disease prevention. My aim is simply to bring to your minds the importance of the subject; to interest you in the concrete results of the researches of scientific men in these matters, and show how much of the suffering and disease which afflict mankind may be avoided.

All of this it is hoped will impress you with the importance of not only taking better care of your own health, but of assisting in spreading the gospel of disease prevention among your friends, especially among our law makers.

Let us first note the splendid results that have followed the attempt to protect our people from communicable diseases.

About 500,000 of our people have tuberculosis of the lungs, or consumption, as it is commonly called.

The study of this disease, originally confined to the medical profession, has through the aid of various individuals and organizations, extended to the general public, and the result of the education which we have gained upon this subject is extremely gratifying.

Since 1880 the death rate from consumption has decreased in this country forty-nine per cent. This tremendous decrease affects chiefly the younger lives in the population.

We now know that tuberculosis is entirely curable in the early stages. We all know what strong efforts have been made to fight this disease by improving public sanitary conditions. The special treatment of the patient has been directed towards strengthening his body, placing him in surroundings where sunlight and fresh air can have their best effect, and isolating him from others so that he may not communicate his malady. We have all become educated along these lines and to some extent have modified our methods of living. The decrease of 49% is the net result of what has been done since 1880 to prevent deaths from consumption.

It is difficult, perhaps, to comprehend the full meaning of the statement that the death rate from this cause has fallen 49%. Taking the death rate, per 10,000 of population, of 1880 as a basis, this means that since that time 63,625 lives have been saved from this dreadful scourge, and that number of people represents a city as large as Saginaw and Port Huron combined.

Typhoid Fever, another disease of young adult life, is of like character. It shows a general decrease throughout the country

of 41% in the death rate since 1880.

Since 1890 typhoid has been known to be a germ disease, and one easily communicated. Primarily, typhoid implies filth, and its presence in any community is an indictment of that community. The thorough disinfection and destruction of all sewage would very soon stamp out this disease. The housefly disseminates the malady by infecting water, milk, and food of all kinds. We are just beginning to realize what a prolific source of disease the housefly is, and a vigorous campaign for its destruction is under way. Again it is thought that the disease may be caught by coming in contact with a patient or with some one who has been with a patient. It attacks chiefly young adults, but, as in the case of consumption, a weakened condition of the body favors its development. The decrease in mortality is a splendid testimonial to the activity of the medical profession, state departments, sanitariums, and others who have combatted this disease, and argues well for its ultimate annihilation.

Although the war upon consumption and typhoid has scarcely gotten well started, yet our very gratifying experience in reducing these two maladies show conclusively what can be done in the way of disease prevention when applied to those of the communicable class.

There are other communicable diseases reaching up into early adult life that have shown a decrease during the same period in consequence of the discoveries of medical science, the increased efforts of the health departments, and the general educational process that is constantly gaining ground.

The death rate from yellow fever has been reduced. Note improvement in Havana, Panama. This disease also belongs in the communicable class, although the specific bacterium has not yet been discovered. We do know, however, that it is transmitted by the mosquito, and since the discovery of this fact great advances have been made in the prevention of the disease. Colonel Gorgas, of the United States army, has practically banished yellow fever from Havana, where it was almost endemic, or persistently present. You have all heard of the splendid results that have followed the establishment of a rigid sanitation, and the enforcement of measures against infection from mosquitoes, in the Isthmian Canal Zone. Col. Gorgas estimates that had the former unsanitary conditions in the Canal Zone been allowed to continue, the American forces employed there would have lost 8,057 of their number from yellow fever during their five years of work. The actual loss during that period, under the improved conditions was 19. The estimated loss from all causes, that would have attended the continuance of the old conditions is 23,950. The actual loss under American control was only 3,317 for the five year period. Was this not worth while?

The treatment of diptheria has undergone a most gratifying development. This disease was for years a veritable scourge. The discovery of the anti-toxin treatment in 1894 promised great results, and since the general application of this treatment in 1895 these promises have been fulfilled. The mortality per 10,000 in the boroughs of Manhattan, the Bronx and Brooklyn, varies from 22 in 1880, to 13 in 1895. From that time it is dropped until in 1908 it was about 3—an actual saving in lives below the 1895 rate of 3,990. No argument is needed to emphasize that point with people who have children.

(CHART No. 6.*—Death rate in the United

*This address was illustrated by fifteen charts, which we could not reproduce, but indicate the subject matter in a few instances.—EDITOR.

States from all causes, compared with other countries.)

Here we have a chart showing the death rate in the United States from all causes, compared with the rate in other countries. Note the fall in the rate in the United States, due chiefly to the lessened mortality from the diseases we have just referred to.

From these charts some idea can be formed of the splendid results attained by health authorities, sanitariums and physicians in their warfare against communicable diseases, or diseases transmitted by germs.

Surely this record shows that campaign of Disease Prevention is worth while. The lives thus prolonged are, however, but a mere fraction of the enormous number that have been permitted needlessly to perish in the past, and which are now perishing every year from both communicable and non-communicable disease.

While we have been saving lives from consumption and other communicable diseases, as already described, we have been permitting the needless sacrifice of an enormous number of our people from preventable diseases of the degenerative class, such as those of the heart, arteries and kidneys

These diseases are commonly known as those of middle life and old age. As a matter of fact they should be confined to old age. But the records show that they are reaching down into the prime of life and cutting off our people in the most useful period of their existence.

(Chart No. 7—Kidney, Heart Disease and Apoplexy, United States Registration Area. Increase in Death Rate since 1880.)

This chart tells the story. Here we have the rise in the mortality from the diseases affecting middle life and old age which is even more remarkable than the drop in mortality among the communicable diseases. We find an enormous increase in the general death rate from this class of diseases.

Allowing for all possible inaccuracies of registration reports, there can be no denying the trend of the mortality. No matter where we conduct our investigations in this country, the result is the same. Separate cities in the various States give the same testimony as the registration area in general.

Without going into this matter further at present, I shall take up the consideration of the causes that underly these conditions. This is not an academic lecture, for the purpose of presenting curious or interesting statistics. It has a practical object in view,—namely, to call attention to the serious and unnecessary loss of American life, and so far as possible point out what can be done, in an organized and systematic way, to check it.

To make clear the causes of the excessive mortality after middle life, it will be necessary to say a word or two regarding the nature of the diseases that produce this mortality. I am not a physician, and it may seem presumptuous in one who is not a physician to attempt such a task; but, after all, science is merely systematized common knowledge. It is possible for the average layman to fully grasp the fundamental principles that underly the causation of many diseases. The diseases that chiefly affect middle life and old age may be grouped under the term "Degenerative," for the reason that some form of tissue degeneration is present in all of them.

While in some cases the heart is chiefly affected, this condition must to some degree be reflected in the kidneys and in the arteries. On the other hand, if the arteries are chiefly affected, the heart and kidneys must to some degree participate. The heart may be compared to a pump which is constantly forcing the blood through the elastic tubes we call the arteries. The

kidney is intimately connected with the circulation, and any obstruction or inflammation in that organ is in time referred, either by mechanical interference with the blood current, or by the circulation of poisons in the blood, which the kidneys should separate and excrete, to the arteries, and secondarily the heart. Of course the brain, liver, lungs and other organs are likewise apt to be affected, but the most important and serious conditions are found in the heart, kidneys and arteries.

You have seen that the death rate is *decreasing* rapidly among the younger lives. But this is no reason why we should ignore the *increase* in the death rate in middle life and old age.

The increase commences with the ten-year period beginning with the age forty, while during practically the same periods in England and Wales the death rate is decreasing, except about sixty-five, where it begins to show a slight increase.

While apoplexy is often classified under nervous diseases, because its effects are manifested in the brain, it is, as a matter of fact, the bursting of a diseased artery causing hemorrhage in the brain, and should be considered under diseases of the arteries. Sometimes a poisonous element in the blood will irritate the arteries, causing inflammation, thickening, or degeneration of their walls. Sometimes a condition of the circulation is produced which increases blood pressure. In both cases the thickening which was originally protective becomes a cause of degeneration, and under some unusual strain the arteries will burst. If the rupture occurs in the brain, paralysis or apoplexy results.

The causes that produce arterial trouble are the same as those responsible for kidney and heart affections, and show the interdependence of heart, kidneys and arteries, as before mentioned.

Since 1880 the increase in the death rate from heart disease in Massachusetts was 105 per cent; in the United States Registration Area, 57 per cent.

Disease of the heart may arise from various causes. The heart muscle itself may become degenerated through dissipation, overwork, worry or nerve strain of any kind. The effect may be directly upon the heart, or as the indirect result of impairment of some other organ. The membranes around the heart may become inflamed, or sufficient poisonous matter may be in the blood to irritate the lining of the heart and impair the action of the valves. Like the kidneys, the heart may be well advanced in disease without the patient being aware of it. Nature will do its best to overcome an obstruction, compensate for insufficiency of any kind, and maintain the function. There are some diseases, however, whose after-effect on the heart are so well known as to be constantly looked for, and to some extent a physician would be forewarned and prepared to remedy the difficulty. This may account for the fact that deaths from heart disease have not increased to such a degree as those from kidney trouble.

Since 1880 the increase in the death rate in the registration area of the United States from disease of the kidneys has been 130 per cent.

In Connecticut the increase was 139 per cent.

In Chicago, 167 per cent. Over two people die now where one died then from this cause.

Among the causes of kidney trouble are alcoholism and nervous tension. Alcoholism has a direct and poisonous effect on the tissues, and leads as well to the disturbance of the functions of other organs. Nervous tension, or high pressure existence, usually affects the heart and arteries, and kidney trouble often follows as a direct result.

The death rate from diseases of the

heart, kidneys, circulatory system and apoplexy combined, has increased in the United States 105 per cent since 1880; while during the same period in England and Wales the death rate from diseases of the heart, apoplexy and blood vessels has decreased 7 per cent.

The increase in the United States represents 81,051 lives, almost as much as the entire population of Grand Rapids.

The natural question is, why are these important organs of the human body wearing out so much faster now than they did thirty years ago?

As to this, opinions may differ. It will doubtless be conceded that a large proportion of the increase in deaths from these diseases is due to excesses in eating, drinking, working and playing,—in short, to intemperate living and the "strenuous life."

And now a word on intemperance, using this word in its broadest sense, to cover excesses of all kinds. Undoubtedly alcoholic excess is an important influence, not alone by reason of the chemical effect of alcohol on the tissues, but because steady or free drinking encourages general carelessness of living and leads to excesses in other directions. In the opinion of many physicians a very large proportion of cases of kidney trouble and heart disease begin primarily in the arteries, either from the effect of poisonous elements in the blood, or through high tension, due to an overworked circulation, the result of dissipation, excitement, nervous strain, etc. It can be authoritatively stated that longevity is very largely a matter of the quality of a man's arteries; or, as an eminent medical authority puts it, his "tubing." In some cases a poor quality of tubing is inherited. In most cases, however, disease arises from the abuse of originally sound tubing. The lesson we draw from this is that the man who is temperate in his habits, takes exercise within proper and reasonable limits, is simple in his diet and tastes, slow to anger and well poised,—in other words, who is in the greatest possible harmony with his environment, is pretty nearly proof against this class of maladies. To him death comes either as an accident or in extreme old age from a natural decline of the "will to live."

There is a latitude allowed in all of nature's operations in the human body. But latitude does not mean license. Nature will accommodate itself to use, but not to abuse. Every consideration is given to man, and if, after all, disaster happens it is reasonably certain that nature has not proven recreant to its trust, but that its laws have been violated. Nature did what it could, and we must look elsewhere for the cause.

Pasteur told the world much about germs but the healthy body has little to fear from them. The continual warfare in our bodies is not to be dreaded so long as the conditions that make for health are present in sufficient force to overcome those that war against it. A healthy body with a maximum resisting power is the great object. Not necessarily a strong body, in the sense of muscular strength, but a body in complete harmony with itself; an organization that works like a smoothly running machine; no disproportion anywhere; no gain in one place at the expense of another. The cultivation of such a body will be a safeguard, not only to its possessor, but also to his descendants, and the resisting power it possesses will enable them to escape many ills that will overtake those who are not so well provided for.

How many of the 1,500,000 people constantly ill in the United States from preventable diseases have heard this statement from their physician: "If I had known of this disease in time, I could have saved or prolonged your life for many years."

There is a prevalent notion that because

an organ performs its functions it is an evidence that no disease can be present. No greater mistake could be made. Very few people are so thoroughly familiar with their own organism as to be aware of any defect in its operation until there is a failure of function.

But, it may be asked, why take so much trouble to delay a dissolution which must inevitably occur? Assuming the average duration of human life to be forty-five years, what is to be gained by increasing it to fifty or sixty? If the three score years and ten of Biblical allotment should be increased to the one hundred which Prof. Metchnikoff claims is the normal age which all men should attain, would the individual in particular or humanity in general be any the better for it? The answer is: The sum total of human felicity and experience would be immeasurably increased if we could divert to its service the enormous energy now wasted as the result, direct or indirect, of illness. Can such a thing exist and not have an effect on the community in general? Half the "isms" under which the world suffers; half the theories that do so much to retard progress would be avoided by a healthy, physical condition. But let us place the argument on the lowest possible basis, and glance for a moment at the actual financial loss incurred by illness.

The loss by chronic invalidism, and in the productive value of lives impaired or lost by preventable disease is estimated to be a billion and a half dollars per annum. This figure means nothing to most of us. It is too big, and the mind cannot grasp it. But let us put the same idea in a different way, and bring it home to each individual. Statistics on this subject are more readily available in England than in this country, for in England the Friendly Societies have long been permanent institutions. These Societies have been very extensive in their operations, and they have discovered that on the average every man can figure on a certain number of days' illness in each year.

Now here is the argument: Knowing that the average man at a certain age will lose so much time per annum, the loss to him in money can be estimated. If a large share of this illness could be avoided, the saving in money and time would be worth something. Suppose that a man at the age of twenty-five were to be ill on an average fourteen days a year until he was sixty-five, he would lose over a year and a half of actual time. As a matter of fact, a year and a half is very low. It is estimated that every death means from two to two and one quarter years of illness; but we will take the tabular figures. In other words, a man will take a year and a half to die, when he might just as well have enjoyed good health for the most of that time, and when he had reached the time of normal dissolution he could have had all his illness at once. When Oscar Wilde was dying in Paris, the attending physician showed some impatience at being called to attend a patient who evidently could not pay him. Wilde, noticing his manner, said to him: "Doctor, I fully realize that I am dying beyond my means." It certainly seems that any man who takes a year and a half to die when he could do so comfortably in a week, is open to criticism of "dying beyond his means."

The individual expense incidental to illness—loss of wages, medical bills, etc., can be readily estimated by each one of us. Multiply the average amount by the 1,500,000 people who are constantly ill, and the total loss to the community is enormous. Any saving that can be made is certainly desirable. But it is not the money the country loses as a result of this unnecessary sickness and loss of life that should prompt us to adopt vigorous preventive measures, but for humanity's

sake something should be done to prevent the suffering, misery and distress caused by these conditions.

To war against disease is to war against poverty, immorality and crime. The moral phase of this question should appeal to every right thinking person.

We have shown the splendid results that have followed an intelligent effort to reduce the mortality from communicable diseases. We have shown the deplorable condition resulting from a group of maladies which have not yet received official attention. We now come to the remedy for this latter condition.

To deal with any subject we must know the facts about it. If we want other people to deal with it we must tell them the facts. Clearly, then, the first thing to do is to instruct the general public about these diseases and then to tell them how to avoid them, leaving it to their common sense to apply the information.

The remedy then has two phases: First, the instruction of the people by Health Bulletins published at stated intervals and distributed gratis. Second, free medical examination to detect disease, to each individual who desires it, at stated periods. These benefits should be supplied by the state.

The Health Bulletin should also contain the facts about the degenerative diseases, and arouse the general public to the importance of attending to them. I do not advocate coercing the citizen into changing his habits or manner of life, except in so far as it is necessary to do so under present laws, but there are a vast number of people who ignorantly violate nature's laws without, of course, appreciating the dangers they are inviting. To such men, we would say: "You are treading on thin ice. If you wish to avoid danger, step over in this direction." It is then a matter for the individual to decide as to how far he will risk his life.

In connection with the Health Bulletins a series of popular lectures should be given. The agricultural departments of the various States send lecturers all through their territory to instruct farmers how to grow crops. Why shouldn't the Health Departments employ men to tell the people how to grow men and women? The healthy man is worth a good many bushels of potatoes.

As to free medical examinations: We have said enough during this lecture to show you how insidious is the progress of some diseases. It is obvious, therefore, that if a man postpones examinations of his physical condition until he is conscious of illness, it may be too late for the most skilful physician to check the disease, or give more than temporary relief. The lesson from this is that periodical medical examinations of every citizen are just as necessary for the preservation of health of the community as vaccination, disinfection, quarantine, contagious disease inspection, and other measures which are designed solely for the protection of a community from a certain class of disease.

Now we come to the question of who is to apply these remedies.

First, let us consider the existing machinery comprised in our State and local Boards of Health. In some respects the constituted authorities have advantages over private enterprise. For one thing, they can enact and enforce laws. Why shouldn't our Health Boards be as active in combatting the degenerative diseases as they have been in dealing with those of the communicable class? The result desired is the same, and they can apply their present organization to attain it. Reference has been made to the methods of the Agricultural Department. Why not conduct an active propaganda on health much in the same way? As the case now stands, any attempt to pollute the source of water supply is

promptly reported and remedied. In the more settled States no place is so remote as to be beyond the quarantine of the health officer. The red placard on the houses warns every one that scarlet fever exists. Isolation of the patient follows the health officers' command. His power is adequate for such cases; why not for others?

In the rural districts practically every resident is more or less known to the health officer. As a member of the community he knows something of the habits of the individuals composing it, and can use his knowledge as a guide in his work. He should be authorized to make medical examinations of those who desire it, or those who do not object to it, without cost to them. A more careful supervision and inspection of health boards would solve the problem. The machinery is there and only needs development.

Attractive publications, popular lectures, personal interest, based on the great altruistic motive involved, are phases of the work which should be attended to. The health board should lose the last trace of perfunctory character, and become an active, vital, co-operative institution possessing the confidence of the people. Let the people know just what they can get by applying at the Health Board, and they will ask more questions than they do now. In the minds of most of us medical information is connected with expense. Teach the people that it costs them nothing to become informed or to be examined, and the Health Board will become a more popular institution.

Those who could afford it would doubtless prefer to go to their own physicians for periodical examinations, and the fact that the State deemed it necessary to conduct such a movement would induce thousands of them to do so.

Until the plan was well understood the applications for free examinations would not be very large, but they would come from the poor and the very poor,—those who know the least about avoiding disease and who are most exposed to it. Thus the benefits of free examinations would go directly to the very element of our population that is more in need of them.

This would be a work of conservation and not of charity. As a matter of fact it would materially reduce the need of charity.

But governmental action is notoriously slow, and rather than wait for it, employers and unofficial organizations should look into the matter. The issue is too vital to brook delay, and if private enterprise is to undertake to deal directly with the individual, the life insurance companies are the normal associations to do it. To them it is a matter of business, and they alone have a sufficient number of lives under continual observation to permit effective action. They know how to begin such a work, and where to begin it, and they have the organization requisite for the purpose. Through their medical examiners they can grant every policy holder a full medical examination at stated intervals; and the incidental expense will ultimately be covered by the lengthened duration of the policy.

Boards of Health should heartily cooperate with any institution whose practical work is benefiting the whole community. The medical profession should give its sanction and hearty support to any effort which their investigation has shown to be devoid of charlatanism or quackery. Any real attempt to relieve misery should have their full recognition. That the doctors as a whole will help any sound effort of the kind is already assured from the sympathy they have always shown with such departures.

A great field is offered for the activities

of the Y. M. C. A. and the W. C. T. U. all over the country. Here are associations based on high moral considerations, to whom nothing is a matter of indifference that touches the welfare of the public. Within them various clubs have been formed with the intention of drawing the members closer together in the bonds of common interest.

Benefit societies and fraternal orders, lodges and friendly societies; trade organizations and social clubs, have ample opportunity to render their members invaluable service. In trade organizations the immediate financial value of such service is more apparent. It means money to the members to be able to attend to their work and to extend their efficiency as late in life as possible.

Large employers of labor could well afford to maintain a bureau of health presided over by a physician whose duties would include periodical examinations. Here the matter might be made compulsory on the men, and they would have sense enough to see its value and to avail themselves of it. Then increasing age would not necessarily mean discharge or reduction in salary, for an old man is more valuable than a young one, by reason of his experience, if he can hold his own by means of a healthy body.

Charitable societies, whose work lies largely among the poor, have an invaluable opportunity. Their connection with the clergy and with the philanthropists gives them a social prestige, while their association with the police enables them to appeal to recognized authority whenever necessary. The immense service these associations could render the community is so evident that neither argument nor discussion need be entered into.

The message I have brought to you tonight is not one of alarm, but one of hope. I have warned against a class of diseases which threaten all of us, and which have not yet claimed the attention they deserve. I have told you of the only way to avoid them and of the only plan devised and in actual operation to furnish the necessary information to the individual himself. I have dwelt on these diseases with no intention of creating the sort of alarm that arises upon reading the circulars accompanying patent medicines. There is no occasion to become introspective, and to permit a fearful imagination to render us uncomfortable. If a person starts right, and arranges for frequent "checking up" of his machinery, he will not find it necessary to undergo the penance of diet, or the weird requirements of an "ism" of some kind.

Good health is the result of right living, and ought to be subconscious. What would you think of a man who was afraid to take a step unless he carefully examined the spot where he expected to put his foot? We walk without thought and we ought to enjoy good health in the same way. If we cultivate the habit of right living, we will live right without thinking about it. If we see our physician at stated intervals, and obey his orders—simply using the same good sense about our own machinery that we do about any piece of mechanism we possess, our health will take care of itself. Undue anxiety is the result of ignorance and the cause of real trouble. When the actual facts are known we are prepared to meet them properly, and when we do that we have no cause for fear. Right living, then, is the last thought I want to leave with you, to the end that your health and the health of the entire community may be as much a matter of course as anything else we do subconsciously.

ANIMAL EXPERIMENTATION AND BLOOD VESSEL SURGERY*

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To the physicians reviewing the work of the last ten years, it would be very difficult to pick out that part of the work that holds out greatest promise. But I feel sure that the scientific investigator ten years from now, as he looks back, will unhesitatingly place his finger upon that chapter of surgery dealing with the vascular system, as the most important contribution to the literature of the past decade.

The investigations carried out by Matas, Murphy, Carrel, Crile and others, have opened up a vista of possibilities the termination of which is difficult to perceive, possibilities not only to the surgeon but to every branch of the medical profession. A brief review of the literature might be interesting.

As long ago as 1759 Lembert advised suturing arterial and venous walls injured in their continuity. Upon June 15th of this same year, Hallowell, a colleague of Lembert's, successfully closed a wound in the brachial artery by passing a hair-lip pin through the edges and applying a figure-of-eight ligature. Unfortunately at this time Assman convinced the profession that injury of the vessel wall would invariably produce thrombosis and obliteration of the vessel calibre. And this belief held until the dawn of aseptic surgery so that it was not until 1886, one hundred and twenty-five years after Hallowell's successful case, that Postemsky of Rome successfully sutured a vessel wall. From this time on cases began to be reported with less rarity till in 1897 Murphy published his paper upon end-to-end anastomosis of blood vessels.

In his text book of Pathology, Ziegler compares the intima of the blood vessel to the peritoneum of the intestine, and it is this similarity that makes successful suturing of the blood vessels a possibility. Just as the experimenters in abdominal surgery found that success in intestinal anastomosis depended upon accurate approximation of serosa to serosa, so the investigators in vascular surgery learned that failure to approximate intima to intima meant almost certain failure to maintain an open vessel. They learned that an exposed injury to the intima meant a proliferation of the endothelium and this to an obliterative thrombosis. The problem resolved itself therefore into finding of a method to approximate the endothelium of the inner coats so that all injured points would be covered. As in intestinal surgery many ingenious mechanical devices were at first employed, but as the surgical technique improved these gave way to the simple suture. Now all that is required for successful permanent blood vessel anastomosis, is a supply of No. 12 to No. 16 cambric needles and silk thread as large as can be threaded. To prevent thrombosis about the minute portion of the suture that is exposed upon the inner surface of the vessel, the silk is boiled in vaseline and the edges of the vessel smeared with vaseline. For temporary anastomosis as in direct transfusion of blood, mechanical devices are still used, notably the silver cannula of Crile.

The direct transfusion of blood, from

*President's address read before the Kalamazoo Academy of Medicine.

a healthy individual to one suffering from disease has been the dream of physicians and the material for novelists for ages. The procedure, simple as it seems, met with practically universal failure owing to the clotting of blood at the point of union. The necessity of preventing any injured points of the intima presenting themselves to the blood current, combined with perfect asepsis, solved this difficulty at once, so that today it is comparatively a simple operation.

In the mind of the surgeon the first indication for transfusion was to relieve shock from hemorrhage, and to temporarily build up a patient to withstand a necessary operation. This has been successfully accomplished many times. Patients weakened by severe hemorrhage from a fibroid uterus have been transfused before and during an operation of hysterectomy, and have left the table with better pulse and color than before the ordeal.

Dr. Keen in an article on recent surgical progress reports a case as follows:

"A baby, the only child of a young medical man, immediately after birth developed hemorrhages from the mouth, nose, stomach and bowels. The various remedies tried all failed and on the fourth day the baby was dying. In the middle of the night the father called Dr. Carrel of the Rockefeller Institute, laid down beside his baby; an artery in the father's arm was laid bare, and sutured end to end to a vein in his baby's leg, and the blood allowed to flow from father to child. The result was most dramatic. As the blood flowed from the father into the baby's veins, the white transparent skin assumed the rudy glow of health; the hemorrhage ceased and never returned. As the published account so vividly puts it, there was no period of convalescence. Immediately before the operation the baby was dying, immediately after the operation it was well and strong and feeding with avidity. Today the baby is a strong, healthy child."

But the field of medicine also demands this agent. Dogs apparently dying from distemper have been transfused from dogs that have recovered, and the disease arrested with almost miraculous suddenness. Human beings suffering with pellagra have received a transfusion from an immune and apparently recovered their health. Knowing as we do that nearly all of the infectious diseases give at least a temporary immunity, the possibilities of this field of therapeutics broadens out into startling dimensions.

But startling as these possibilities and achievements are they pale into insignificance compared to the hopes that spring up within us when we think what the next few years may bring forth as the result of successful permanent end-to-end anastomosis of blood vessels. The difficulties that present themselves in this type of work are two: First, the necessity of absolute, not relative, asepsis; and second, the small size of the parts to be sutured. The necessity for absolute asepsis is imperative, as the slightest degree of infection about the sutures means thrombosis with occlusion of the blood vessel canal. The small calibre of the vessel is partially compensated for by the fact that the endothelial layer being on the inner surface of the vessel, we are able to evert the line of sutures instead of being compelled to invert as in intestinal anastomosis; thus avoiding the danger of obstructing the canal by a valve flap.

Let us review briefly what has been accomplished by the so-called experimental work upon the lower animals. Sections of the blood vessel removed and preserved in cold storage and in formalin for 60 days have been grafted into the circulatory system and becoming viable performed the

function of the vessel into which they were transplanted. This proves that we can always have at our disposal material for replacing sections of vessels unavoidably injured.

The femoral artery and vein have been severed, the proximal end of the artery sutured to the distal end of the vein and the distal end of the artery to the proximal end of the vein; making of the artery a quiet flowing vein and of the vein a pulsating artery. The same procedure has been carried out with the external jugular and the external carotid. The entire thighs of two dogs have been amputated and the thigh of dog "A" grafted to dog "B," dog "B" to dog "A"; muscle sutured to muscle; nerve to nerve; bone to bone; and blood vessel to blood vessel; both animals recovering with perfectly useful extremities.

The kidneys, with the renal arteries and veins with the adjoining sections of the abdominal aorta and vena cava, ureters and a section of the bladder wall into which they empty, have been removed from one cat and grafted into another in which the same parts have been removed. The cat made a perfect recovery and secreted normal urine. The kidney of a dog has been removed, transplanted to the neck; the renal artery sutured to the carotid; the renal vein to the external jugular, and the ureter to an opening in the skin. Not only did the kidneys live, but also secreted normal urine. The heart has been grafted into the circulation of the neck and maintaining its pulsation for a time sufficient to take cardiographic tracings.

What may we hope for clinically as a result of these experiments upon the lower animals? Clinically, end-to-end anastomosis of blood vessels has been resorted to mostly in the treatment of aneurism and in accidental wounds of the vessel. A notable exception to this was a case reported by Braun in which a section of the abdominal aorta was removed during the extirpation of a ganglion neuroma of the sympathetic. The patient, a child six and a half years old, made a perfect recovery with no circulatory disturbance. If sections of the abdominal aorta can be removed and kept indefinitely to be transplanted when needed, why shall we let our patients with aneurism of the abdominal aorta go on to certain death? If kidneys can be transplanted from cat to cat and from dog to dog, then they can also be transplanted from man to man. In the wards of the hospitals of our larger cities, patients are dying daily as the result of accident. In the same hospitals, others are dying of double renal tuberculosis, their bodies otherwise healthy. Transplantation of the kidney from the patient dying from accident to the patient dying from renal tuberculosis may mean a high mortality, but cannot exceed the present mortality of 100%.

But this is sure, all that has been accomplished and all that we hope will be accomplished in the future depends upon one thing, the continued experimental work upon lower animals. If this stops, then surgical progress comes practically to a standstill, and this is what the anti-vivisectionists are striving to accomplish. It was their misguided enthusiasm that drove Lister out of England to complete his work on the Continent, and has made of English surgeons, followers and not leaders, in new work. Following his report of the child saved by transfusion, Keen asks, "Reckoned in rabbits, what is the value of this child?" What the anti-vivisectionists would say I do not know, but the mother's answer would not be hard to guess.

The same authority views the present conditions as follows:

WHAT THE FRIENDS OF EXPERIMENTAL RESEARCH HAVE DONE

1. They have discovered antiseptic surgery and so made possible the wonderful results of modern surgery.

2. They have made possible practically all modern abdominal surgery, including operations on the stomach, intestines, liver, gall bladder, pancreas and kidneys.

3. They have made possible all the modern surgery of the brain.

4. They have demonstrated how lock jaw spreads from the wound; how sometimes it can be arrested and cured; and, still better, how it can be prevented.

5. They have reduced the death rate in compound fractures from 65% to less than 1%.

6. They have reduced the mortality of ovariotomy from two out of three to three out of one hundred.

7. They have abolished yellow fever.

8. They have made possible the prevention of nearly all cases of hydrophobia.

9. They have cut down the mortality of diptheria in New York City from 158 deaths per 100,000 in 1894 to 38 deaths per 100,000 in 1895.

10. By the use of the serum recently discovered by Flexner at the Rockefeller Institute, they have changed the mortality in cerebro-spinal meningitis from 75% and even 90% to 30% or less.

11. They have shown the cause of acute tetany after operation for goitre so that it now can be prevented.

12. They have almost completely abolished the dangers of maternity, reducing death rate from ten or more mothers out of every hundred to less than one in every hundred.

13. They have shown the cause and method of propagation and of prevention of the deadly malaria, which devastates whole regions and armies. Its extinction is only a matter of time.

14. They have reduced the mortality of tuberculosis by from 30% to 50%. For Koch's discovery of the tubercle bacillus is the foundation stone of all modern progress in the treatment of tuberculosis.

15. They have enormously benefitted the lower animals themselves by discovering the causes and dangers of tuberculosis, texas fever, anthrax, glanders, hog cholera, and other infectious diseases of animals; thus enabling us to combat them more successfully or even to prevent them.

WHAT THE FOES OF RESEARCH HAVE DONE.

1. Nothing but to stand in the way of progress. Not a single human life has been saved by their efforts; not a single household made happy; not a single disease has had its ravages abated or abolished. The victims of their sincere but misguided zeal are men, women and little children. Even the lower animals themselves may well cry, "Save us from our Friends."

THE URGENT NEED OF OPERATING IN ALL CASES OF HERNIA*

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There is urgent need of operating in all cases of hernia, but we will restrict our paper to the more frequent forms—those of the abdominal and pelvic regions. We will not concern ourselves with the origin of hernias, as the need or operation is not dependent on whether the cause of inguinal hernia is due to the faulty development and attachment of the muscles (Ferguson),

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or whether the defect is one of saccular or congenital origin (Murray). We do know that there is a displacement of the tissues and organs with a negative tendency to repair, which shows an increase in its local and systemic pathological conditions.

It is remarkable the ill-effect the sight of an enlargement upon the abdominal or pelvic wall has upon the minds of some individuals. They will tell you that this enlargement is before them "morning, noon and night."

Not all cases of reducible hernia are free from adhesions or local pathological conditions other than the hernial opening. Adhesions around the ring are numerous. We find this the case at the internal orifice of the femoral canal. The local conditions may vary to a marked degree—may name the variety of hernia, as reducible, irreducible, partially reducible, inflamed, adhered, strangulated, etc. The hernial opening may be small, tight, irritable, predisposing the sack to a partial or a complete strangulation when forced through the opening, or the opening may be large and may be increased by force of the additional abdominal contents pushing their way through. The glands adjacent become hypertrophied and adhered from the continued irritation of hernia.

Conditions in and about the opening are so uncertain that the surgeon takes great chances in delaying operation. Cases are reported where the strangulated gut was reduced but a portion of the omentum remained. In these cases there was neither constipation nor vomiting. (Sir W. H. Bennett.) An unrepaired hernia predisposes to hernia of the opposite side.

The sac plays a most important role in hernia. It is adhered in nearly every case of congenital hernia. Adhesions about the hernial openings keep up a constant tugging upon the abdominal viscera. In all forms of hernia there is at least a presumptive possibility of its becoming strangulated. Strangulation in children is the exception so there is some excuse for not operating on them. In middle life on account of the activity of the individual, and in old age on account of weakness and lack of muscular tonicity, we have the greatest number of strangulated hernias. Irreducible and obstructed hernias are those which are prone to strangulation.

We must warn the patient that he should be on the lookout for certain symptoms which are pathognomonic of strangulation, yet there is danger of strangulation not being recognized even by the medical attendant, as there may be no sudden onset, no characteristic local pain, no nausea, no vomiting and no tenderness, but there may be expulsion of gas or even fecal evacuation. Look back over your records. Is there not here and there a displaced kidney, an acute congested liver, an irritated gall bladder, a general fermentative congestion of the whole intestinal tract, a general atonic condition which is first manifested upon the large intestine bringing about constipation or sometimes diarrhoea? I have seen a case of intestinal atonicity which became chronic, lit up with an acute attack developing general peritoneo-intestinal sepsis. The lesion affecting the large intestine may extend to small intestine, setting up an enteritis with all the attendant destructive sequelæ, as ulceration and perforation of the walls of the intestines. The lesion may extend up the intestines to the stomach, giving your patient gastritis, which if continued may bring about dilatation of the stomach or even ptosis.

As we watch and study our hernia cases more closely we note that very many of the patients suffer from symptoms simulating those of dyspepsia—nausea, not pronounced, constipation in nearly all cases, gastritis with ptosis, also intestinal

displacement, even urinary reflex troubles are noted—a frequent desire to micturate, an undue straining when emptying the bladder, a feeling that the bladder has not been emptied. Very many patients develop hypertrophy of the prostate. These reflex urinary troubles cause atrophy of the bladder wall and even changes in the kidney tissue itself. Frequently old cases are complicated with albumenuria. All cases produce some reflex irritation. All hernias with adhesions produce reflex stomach troubles which are frequently treated as such, without of course, being benefited. A strangulated hernia may cause tympanitis, or even peritonitis may develop—undesirable complications.

The cause of strangulation is hardly settled. From fecal impaction and mesentery involvement to malposition and condition of sac, we find enough causes to bring about a strangulated hernia. Besides the mechanical causes, we have as a complication sepsis *per se*, Bacillus coli communis, and staphylococcus and streptococcus infection. The local complications may be such as to require a resection of portions of the omentum which increases the mortality, and very often we are forced to a resection of the intestine which brings a high mortality. The percentage of recoveries in strangulated cases is about 50%. Very often we have an escape of feces due to the rupture of the intestine, or as a complication in the resection of the intestine. Many of these cases are followed by peritonitis and recovery is not the rule. In uncomplicated cases, where the surgeon and the patient have been prepared, the percentage of recoveries should be from 98% to 100%.

An important factor in the early operation for hernia is the opportunity given both the surgeon and the patient for preparation. To do satisfactory work the surgeon should be prepared both mentally and physically—the mind refreshed and an entire change of clothing made before entering the operating room. This is rarely possible in acute cases or operations for strangulation, nor is a hospital or other suitable place always accessible, especially in rural districts. Many times the country practitioner is called to a case of strangulated hernia with inadequate facilities for operating, as a result of which the patient dies, or at best an unsatisfactory result is obtained. Again the danger from the anæsthesia is manifestly greater when the patient is not previously prepared. Before administering an anæsthetic it is highly essential that the alimentary canal be irrigated thoroughly, the bladder drained and a careful examination of the urine made to detect the presence of albumen; this to aid in the choice of anæsthetic. It is also necessary that the site of operation be as nearly aseptic as possible. This can be done only by thoroughly scrubbing and shaving at least 12 hours before operation and applying a moist compress of some antiseptic solution. When the patient is brought to the operating table the field should again be scrubbed.

Knowing that the hernia increases in size, the complications in number and seriousness, and that a grave if not fatal condition must be the result; knowing the necessity of proper preparation, we ask but one question—why delay a comparatively simple operation for one of greater magnitude?

FURTHER STUDIES OF THE DIAGNOSTIC VALUE OF THE "HEMOLYTIC TEST" IN CANCER AND TUBERCULOSIS*

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The history of the attempts to discover in the blood sera of patients affected with cancer some specific test for new growth is both interesting and instructive. The elaborate researches of Ehrlich and his followers in the endeavor to find characteristic morphological changes in the blood corpuscles of individuals, the victims of malignant disease, are well known. These studies proved only that the blood of cancer patients presented a rather varying type of secondary anæmia, although they were productive of an immense amount of information regarding the differential estimation of white cells, and the behavior of blood cells in general to various dyes. Studies on the chemistry and the physical properties of blood sera of cancerous subjects have not until very recently given promise of disclosing anything typical for this protean class of ailment. The discovery, in 1900, by Grunebaum (1) and Ascoli, (2) of the agglutinating properties of certain cancerous sera, appeared to offer some prospect of being diagnostically valuable. It was soon shown by Donath (3), Gay (4), and others that the agglutination reactions were possible with sera from non-cancerous patients.

The more recent researches have attempted to prove that there exists in the blood sera of patients affected with malignant disease, certain substance or substances, which are capable of causing destruction of the red blood cells of patients not cancerous, but only to a limited extent of the red cells of the cancerous patient. This phenomenon of "hemolysis" was early commented upon by Kelling (5) who had observed its occurrence when sera from human cancer patients were brought into contact with erythrocytes of sheep, cows and chickens. Kelling showed that the blood sera from these cancer patients destroyed (hemolyzed) the red cells of these animals, whereas the sera from normal individuals appeared to have little or no destructive effect. However, shortly afterwards Fischel (6) demonstrated that while Kelling's observations held, in the main for certain types of cancer, there were other diseases as severe as diabetes, tuberculosis and pernicious anæmia, the sera of which destroyed the red cells of aliens.

About two years ago Weil described a new method of studying the hemolytic reaction in disease. He noted, while working with "infectious lymphosarcomata" in dogs, that the salt solution extract of these tumors had little effect upon the erythrocytes of non-infected dogs, unless the tumors "extracted" by salt solution had become necrosed and broken down. In this event, the salt solution extract of the necrosed tumors caused prompt hemolysis of the sound dogs, erythrocytes. Similar conditions were found to exist where necrosis was brought about experimentally and aseptically (as by ligation of vessels)

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in organs non-cancerous. It was later shown that the blood sera of animals where necrotic infectious lymphosarcomata were present, contained properties which made such sera capable of destroying red cells of sound animals. It was also demonstrated at this time, that, while the sera from the cancerous dogs was capable of destroying the erythrocytes of sound dogs, they had little, if any, destructive effect upon the red cells of the cancerous dogs. In other words, the sera of infected dogs appeared to be unable to hemolyze the more or less "immunized" red cells of these animals.

The precise nature of the cell-destroying property present in the sera of cancerous animals has as yet not been determined. It has certain poisonous and irritative properties as shown by Wade, who demonstrated that materials isolated from necrotic tumors are capable of producing interstitial nephritis when injected into the circulation of test-animals.

It will be readily appreciated that the step from the study of the hemolytic reactions in animals to their investigation in humans was a short one. The work has been eagerly taken up in this country, notably by Weil (8-9), Crile (10), Wittemore (11), Blumgarten (12), Johnston and Canning (13) and others.

Weil's (14-15) work showed that in a series of 82 cases, 56% of sera from patients affected with advanced malignant growths was hemolytic to normal alien corpuscles. Of the cases of benign tumors examined, 33% was productive of a like hemolysis, and in 26% of sera from patients ill, but clinically non-cancerous, similar results were observed. No apparently normal sera produced destruction of alien cells. The investigations of Wittemore showed that of 109 cases tested, clinically well and otherwise, "direct hemolysis" occurred in 36% to the carcinoma cases, in 50% of the tuberculous patients—all stages of the disease—in 18% of patients affected with ailments other than cancer and tuberculosis, and in 17% of clinically well individuals. Blumgarten reports that in his series, 72% of sera from cancer patients produced direct hemolysis, while the sera from but 10% of patients affected with other than malignant disease were hemolytic.

The results obtained by Crile and his assistants have thus far been the most encouraging. These investigators report a series of 541 cases. Of this series 211 individuals were clinically well. In none of these subjects was the hemolytic reaction described by Weil obtained. In about 10% of seventy-one cases of pyogenic infection there was hemolysis of alien corpuscles. Of 55 cases of benign tumors, no sera were reported as hemolytic. Of 153 cases of malignant disease—all stages —the sera from 130, or 85%, produced varying degrees of hemolysis of healthy, human red cells. Of 11 cases of cancer, with clinical recurrence, 100% maintained persistence of the positive reaction. Of 37 cases, postoperative, without clinical recurrence, examined at periods of from three weeks to fifteen years after operation, none exhibited hemolytic power of their sera towards healthy alien cells. Of 52 cases of tuberculosis, 92% showed the reaction which Crile has called "reverse hemolysis," i. e., the destruction of erythrocytes from the tuberculous patients by sera from healthy aliens. Crile and his co-workers noted that the cancer cases showing no hemolysis were late inoperable growths; that cancers of the mucous surfaces showed more uniform hemolysis than did those located in deeper tissues; that in cases which had been operated upon with clinically no recurrence, the hemolytic power of the sera was lost in from twelve days to three weeks; that in cases where the

incomplete operation had been performed, the serum never lost its hemolytic power; that chilling the sera appeared to increase hemolytic power, while heating it above 55 degrees centigrade seemed to destroy the hemolytic property.

In a very recent communication, Johnston and Canning (13) report results similar to those described by Crile. In the main, they claim to have used the technique described by Crile and his assistants. Three hundred one cases are tabulated. In the cases of carcinoma (42 in number) the hemolysis (direct) was positive in 85.7%. In 9 cases of sarcoma, the direct hemolysis was determined in all cases. Two cases of endothelioma were positive. Of 14 benign tumors, the serum reaction was negative uniformly. Of 43 cases of tuberculosis, 16% showed reversed hemolysis, the remaining cases were negative. Johnston and Canning also report positive reactions in septic infections, typhoid fever, lobar pneumonia, normal individuals (error in technique?) and with Coley's fluid.

These reports by the late investigators appeared to warrant more than passing investigation of the hemolytic reaction as a diagnostic agent, for while many cases of cancer and tuberculosis are readily diagnosable by clinical means, yet there are cases where growths are situated in organs not always accessible, where such laboratory test would surely be of great import if found dependable. Either the improved techniques suggested by Crile and his followers had brought about greater accuracy, or the manifestations of the reaction had been misinterpreted. This applies particularly to those cases of so-called "reverse hemolysis," as in tuberculosis, where the serum of the alien is capable of destroying the red cells of the subjected tuberculous. It was for the purpose of satisfying himself upon some of these points that the writer took up the work. His earlier report (16) comprised findings from the investigation of the sera from 85 individuals. Of these there were 12 cancer cases. Seven or 58.3% showed positive reaction. There were two benign tumors. In neither was there a positive reaction. Of 15 cases of tuberculosis, two showed "reverse hemolysis" and one showed the typical "cancer reaction" (direct hemolysis). There were 12 cases of syphilis. The positive reaction was obtained once in these. There were 35 cases of diseases other than those quoted; 5 showed hemolysis similar to that exhibited by the cancer patients and one showed "reverse hemolysis." Of 19 normals, one showed the direct hemolysis as manifested in the cancer cases.

Since the publication of his first, and what must be considered preliminary report, the writer has had opportunity of continuing his investigation, and the final results to date furnish the basis of this communication.

The technique of the reaction has been frequently described. That suggested by Weil and Crile has been followed in the main.

TECHNIQUE

Blood is obtained from the subject, either by direct puncture of the arm veins or from the end of the finger, under aseptic conditions. It is necessary to obtain from each patient, blood corpuscles and blood serum in separate containers. In order to obtain the serum, blood is allowed to run directly into sterile test tubes. From forty to sixty drops are usually sufficient. If much serum is required for the purpose of running many sets of controls, then from five to ten cubic centimeters of blood should be obtained. This large amount can best be secured by direct puncture of a superficial arm vein. After obtaining the blood for serum, the test tube is either slanted and placed at once in the ice box,

or is at once centrifugalized, and after the serum has thus been mechanically separated is then placed at ice box temperature for from twelve to twenty-four hours. It is especially requisite that serum be kept at even temperature. If the temperature fluctuates the hemolytic properties of the sera are greatly affected. The red blood cells for the test are obtained by allowing from ten to twenty drops of fresh blood to run into salt-citrate solution or into a tube or flask containing several small glass beads. In the latter event the tube or flask is gently agitated and defibrination accomplished, with prevention of clotting. It has not appeared best to us to prevent clotting in this way. There seem to be several objections. Cells are readily injured by the sharp edges of the beads, and it seems that hemolysis is more readily brought about in them than under conditions where cells are preserved in salt or salt-citrate solution. Defibrination by beads is cumbersome, the cells are sometimes separated from the fibrin shreds with considerable difficulty, and if the shreds are not separated, it is frequently noted that hemolysis is delayed or interfered with on account of cells being entangled within the fibrin network. Before using the corpuscles it is necessary to wash them several times with normal salt solution. Sometimes it is difficult to free the cells from fibrin when glass beads have been used. The bits may seriously interfere with the reaction as a consequence. After washing, the erythrocytes are placed on ice to be used when serum is available.

In the manner above described, blood serum and red cells are obtained from normal individuals, etc. When the components of the reactions have been thus prepared, the test is ready to set up. As before mentioned, it has not appeared necessary to use the triple controls suggested by Crile. It does not appear that there is any greater accuracy in such method than when a few well-manipulated controls are followed. The sources of error are certainly greater. We have in all cases tested each suspected serum with at least two normals, and against cells suspended in normal salt, and against cells and sera in sterile water. With Crile and others we have noted that heating sera above 55° Centigrade prevented hemolysis.

Our procedure in carrying out the test is to add to the several test-tubes successively five or ten drops of a 5 per cent suspension of normal red cells in normal salt solution, then respectively three or six drops of blood serum from the cancer patient (or other subject), three or six drops of blood serum from the normals, three or six drops of normal salt solution, and three or six drops of sterile water. To the next group are added, respectively, five or ten drops of a 5 per cent suspension of red cells from the cancer patient (or other subject), and then to the various tubes three or six drops of normal serum, of serum from the suspected individual, of normal salt, and of sterile water. The tubes are then thoroughly agitated. When the smaller portions of each constituent of the reaction are used, the mixing may be best done with capillary pipettes, after the fashion of cell suspension mixing in the working of the opsonic index. After thorough mixing, the tubes are placed in a thermostat at 37° Centigrade for two hours. If the tubes are placed in a vessel containing water in the incubator, it is possible that they may be agitated several times during the period of incubation, without interfering with the progress of the reaction. After incubation, the tubes are removed from the incubator and placed at icebox temperature for twelve hours. They should be shaken once or twice during this period. The tubes are then observed for evidences of hemolysis. This is shown by

the pink coloration of the fluid above the cell debris. It is best to have the observations made by some one who knows nothing of the clinical histories of the cases being tested. If reactions are read after twenty-four hours following removal of the tubes from the thermostat, the information derived is dubious, inasmuch as hemolysis may occur in tubes containing no serum. It is rare to secure hemolysis in any tube as complete as that in the control containing sterile water, even though the hemolytic properties of the serum tests are marked.

TABLE I

Clin. Diagnosis	Pathologic Findings	Remarks	Own Corps.	Alien Corps.
1—Malignant Disease:				
Palate and Cheek	carcinoma	Late	O	++
Breast —3	"	Necrotic	O	++
Breast —1	"	Mod. adv.	O	+
Breast —2	"	Mod. adv.	+	++
Breast —2	"	Early	O	O
Lip —1	"	Early	O	+ slt.
Prostate —1	"	Early	O	+ slt.
Uterus —4	"	Mod. adv.	O	++
Uterus —1	"	Early	+	+
Uterus —2	"	Mod. adv.	+	O
Stomach —5	"	Early	O	O
Stomach —1	"	Early	O	+ slt.
Bowel —2	"	Mod. adv.	O	+ slt.
Bowel —1	"	Early	O	O
Bowel —1	"	Early	O	+ slt.
Bone —1	osteosarcoma	Mod. adv.	O	O
Lung —1	sarcoma	Late	O	+
Oesophagus—1	carcinoma	Mod. adv.	O	O
Gall tract —1	"	Late	+	+
2—Benign Tumors:				
Prostate	adenoma	Early	O	O
Uterus —2	fibroid	Mod. adv.	O	O
3—Tuberculosis:				
Pulmonary —1		Incipient	O	O
" —2		"	+ slt.	+ slt.
" —5		Mod. adv.	+	O
" —1		" "	O	+
" —3		Late	+ slt.	+
" and pleura—3		Early	O	O
" " " —2		Old	O	O
Glands —6		No suppuration	O	O
Glands —1		Suppuration	+	+
Glands —1		Old healed	O	O
Bones —3		Mod. adv.	O	O
Bones —2		With anæmia	+	+ slt.
Bones —1		Early	O	O
G. U. and General—1		Rapid Progress	O	+ slt.
Bowels —1		Anæmia—lung inv.	+	+ slt.

Clin. Diagnosis	Pathologic Findings	Remarks	Own Corps.	Alien Corps.
4—SYPHILIS				
Primary —1			O	O
Secondary —3			O	O
Secondary —1			+	+
Tertiary —7			O	O
Tertiary —3			+ slt.	+ slt.
Tertiary —4		With anæmia	O	+
5—OTHER DISEASES:				
Pernicious anæmia —1		Mod. adv.	+ slt.	+ slt.
Pernicious anæmia —1		Early	O	O
Hodgkins' Disease —1		Latt	O	O
Chlorosis —2		Mod. severe	O	+
Chlorosis —1		Early	O	O
Secondary anæmias—2		Mod. degree	O	+ slt.
Secondary anæmias—2		Early	O	O
Addison's Disease —1		Early	+ slt.	+ slt.
Graves' Disease —1		Anaemia	+ slt.	+ slt.
Graves' Disease —2		Early	O	O
Aneurism —1		Of aorta	O	O
Aneurism —1		Late of aorta	+ slt.	+ slt.
Cystitis —1		Hemorrhage	O	O
Tonsilitis —1		Suppuration	O	O
Tonsilitis —1		Non-suppurating	O	O
Acne —1		Diffuse lesion	+ slt.	+ slt.
Endocarditis—1		Old rheumatic	+ slt.	+ slt.
Nephritis —1		Chr. parenchym	+ slt.	+ slt.
Nephritis —1		Chr. interstit.	O	O
Nephritis —1		Chr. interstit	+	O
Gall stones —1		Febrile	+ slt.	+ slt.
Enlarged parotid—1		Anæmia	O	O
Brain abscess			O	O
Arteriosclerosis—1		Anæmia	O	+
Neurasthenia—3			O	O
Hysteria			O	O
Achylia gastrica		With Trichomonas intestinalis	O	O
Chorea —1		Anæmia	+ slt.	
Chronic headache		Ophthal. migraine and anæmia	O	O
6—NORMAL INDIVIDUALS ALL AGES—23			O	O
NORMAL INDIVIDUAL—adult—1			O	+

TABLE II—SUMMARY

Clinical Diagnosis	No. of Cases	Positive	Negative	Reverse	Undeterm.
MALIGNANT DISEASE	31	14	10	4	3
BENIGN TUMORS	3	0	3	0	0
TUBERCULOSIS	45	2	27	5	11
SYPHILIS	19	4	11	0	4
OTHER DISEASES	36	5	20	2	9
NORMALS	24	1	23	0	0
Totals	158	26	94	11	27

We have not used extensively the capillary pipette method as suggested by Eppstein. It appears to have possibilities.

The results of our work herewith presented comprise observations upon 158 cases affected with various ailments and clinically well. The scope of the work will be seen by referring to Table 1. It is not possible here to go into minute details concerning the history and the clinical findings in each individual case. Some of the cases were exceptionally interesting. Apart from the cancer cases, particular interest was attached to the findings in the cases of tuberculosis, syphilis, the anæmias and those diseases with anæmia.

Table II summarizes the gross results of the work.

It might be of value to say a few words with regard to the manifestations in the cancer cases. By positive reaction we understand that the normal red cells to which serum from the cancer patient has been added are destroyed (hemolyzed) more or less completely, while the cancer patient's cells are not hemolyzed by the addition of its own serum or the serum from the sound patient. The reactions which we have classed as "undetermined" are those where destruction of red cells took place in both combinations. By the reaction of reverse hemolysis, it will be recalled, we mean the cells of the suspected patient are hemolyzed by normal or alien serum. Our work summarizes the reactions in 31 malignant tumors. Fourteen of these (45.1%) gave positive reaction. Four showed reverse hemolysis, three were undetermined and ten were negative. The cases in which positive manifestation was noted were in general late and moderately advanced lesions. This is not the rule, however, as it will be seen by looking at Table I, that reactions were obtained in early cancers and not always in moderately advanced or late processes. The processes associated with necrosis seemed to cause more prompt and more distinct hemolysis, in the main, than those where the tumor masses were well preserved. Portions of the body where the circulation is perhaps less marked—as bone and prostate gland—appeared to respond slowly, even though the cancerous process were well advanced. Cancers of the uterus were accompanied in general by distinct and prompt hemolysis. The cases of cancer where the anæmia was more pronounced appeared to give more definite positive reaction than those where the lesion was well confined with slight anæmia. This also applies to cases where the loss of weight had been marked and rapid.

Of the three benign tumors examined none gave positive reaction. In none was the anæmia or the loss of weight prominent.

The consideration of the tuberculous cases is interesting. It will be noted that 45 cases are tabulated. But two of these gave positive reaction, and only 5 showed "reverse hemolysis." All the cases showing "reverse hemolysis" were moderately advanced cases of pulmonary tuberculosis, and were all anæmic, febrile and had lost weight. Eleven cases are classed as undetermined. Perhaps a more experienced observer than myself would have classed some of these as reverses. The distinction did not appear sufficiently evident, however, in my judgment. Twenty-seven cases showed no reaction either way. To these belonged no particular type of the disease. It is interesting to note, however, that 11 were incipient t.b.'s without anæmia and little fever and loss of weight, and 5 were well localized lesions confined to the pleura and lungs, with fair general state. Some of the other cases with anæmia—as for example tuberculosis of the bowels and bones—showed distinct hemolysis both ways.

There were 19 syphilitics examined. Four, or 21%, gave positive reaction, while an equal number were undetermined. Eleven were negative. There were no cases of "reverse hemolysis." All the cases of syphilis showing positive reaction were cases of tertiary with more or less severe anæmia. The cases of visceral syphilis seemed to respond more noticeably than others.

The study of the 36 cases other than cancer, tuberculosis and syphilis is most interesting, and is perhaps the most important feature of the communication. Five of these cases (13.9%) (namely two cases of chlorosis, one case of arteriosclerosis with secondary anæmia, and two secondary anæmias from infectious disease) showed moderately well marked positive reaction. Twenty cases are negative. Two cases showed reverse hemolysis. These were one case of achylia gastrica with trichomoniasis and anæmia and one case of the chronic interstitial nephritis. In the former case the reaction was not well marked, but distinct enough to be called a hemolysis. Eleven cases are classed as undetermined. A rather striking proportion is found in those disease conditions associated with anæmia.

Of the 24 normal individuals (clinically well) but one case showed positive reaction. One might question whether or no there was some slip in the technique in this case, but as far as known there was no error, and the evidence must be accepted for what it is worth, inasmuch as the patient appeared very well at the time his blood was taken. Some old tuberculous focus or some recent infectious disease may have modified the test in a way not understood at present.

The summary shows that of the 158 cases, 26, or 16.4%, revealed positive reaction. Of these 26 cases, more than half, were cases of malignant disease. The majority of the remainder were syphilitic and tuberculous. The disease conditions generally giving positive reaction were those associated with more or less marked anæmia, and in many instances with loss of weight.

Of the 158 cases tested, 94, or about 60%, were negative, while 27, or about 17% were classed as undetermined. Some of these so classed might have been called positive by a more experienced worker. Eleven cases showed "reverse hemolysis." The greater number of these were tuberculous—moderately advanced cases with anæmia—but a fair proportion of "reverse hemolyses" was obtained in the cases of malignant disease.

It would appear, then, from this brief consideration of the work of others and the results we submit that certain facts are brought forward prominently. It seems that in the blood serum of some cases of malignant disease—those generally associated with anæmia and loss of weight—there exists a hemolytic property for alien red cells. It also appears that while this phase is interesting and may be of value in certain individual cases, similar manifestations are possible from the sera of patients non-cancerous. We have herewith called attention to this manifestation in cases of tuberculosis, syphilis and other disease conditions. It will be noted, however, that the conditions where this direct hemolysis is obtained are those frequently associated with anæmia, loss of weight and cachexia. We have not noted that the reaction of reverse hemolysis mentioned by Crile as occurring in 92% of cases of tuberculosis is characteristic. It occurs occasionally but is by no means characteristic, inasmuch as we have shown that it also occurs in malignant disease, syphilis and other diseases. As Crile suggests, our work also shows that the transfusion of blood from one individual to another in cases of emergency is a dangerous procedure unless previously the

hemolytic reactions of the two sera have been noted. In conclusion, it should be emphasized that while the main mass of data is at present against the hemolytic reactions, being characteristic for any single class of disease; yet the large number of cancer cases showing this reaction should urge us to seek modifications of the method in the hope that study of various sera along other lines will lead to the firm establishment of a specific reaction for cancer and other disease conditions which seem to have specific pathology.

The writer's thanks are due Profs. de Nancrede, Peterson, Loree and Vaughan, and Drs. Kollig and Witter for opportunity of carrying on the work here outlined and for suggestions.

First National Bank Building.—Fine Arts Building.

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SERUM TREATMENT OF CANCER

Eugene Hodenpyl of New York reports his experiments in treating cancer with ascitic fluid. The fluid was obtained from a patient with carcinoma of the liver and other organs and marked ascites. The patient had had several operations without results, but later there was marked improvement though the ascites remained. This was used for inoculaton in 47 cases for advanced inoperable cancer with very favorable results.—*Medical Record*, February 26, 1910.

SURGICAL SUGGESTIONS.

The Roosevelt clamp simplifies gastroenterostomy and enteroanastomosis.—*American Journal of Surgery.*

There are exceedingly few authentic cases on record of "idiopathic" gastric hemorrhage.—*American Journal of Surgery*

The calcaneus spur is a real condition—especially in people past middle life. It may be associated with flat-foot, but is *not* flat-foot. A properly fitting ring cushion will often relieve the condition.—*American Journal of Surgery.*

At least one good surgeon (Treves) never permits an intra-abdominal pedicle ligature to include undivided peritoneum. He always exposes the vessel itself, except in omental pedicles.—*American Journal of Surgery.*

In suturing a laparotomy wound in the right hypochondrium, remember that the vessel running near the round ligament may be punctured in the peritoneal suture. Its injury usually gives rise to very troublesome hemorrhage.—*American Journal of Surgery.*

The Journal of the Michigan State Medical Society

All communications relative to exchanges, books for review, manuscripts, advertising and subscriptions should be addressed to Wilfrid Haughey, A. M., M. D., Editor, 15 East Main Street, Battle Creek, Michigan.

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MAY

EDITORIAL

A DEPARTMENT OF PUBLIC HEALTH

Senator Robert L. Owen of Oklahoma, has introduced a bill in the Senate creating a National Department of Public Health, with an officer in the President's Cabinet. In support of this bill Senator Owen delivered a speech before the Senate on March 24th, in which he entered into a lengthy argument showing the necessity for such a department. He discussed the prevalence of Yellow Fever, Hookworm diseases and Bubonic Plague and called attention to the vast amount of work that has been accomplished by organized effort in lessening the spread of them and other diseases. He urged that with a National Department we would be able to do far better work in life conservation. He stated that the annual loss of life from Tuberculosis alone, in the United States—a preventable disease—is 150,000 at the average age of 35 years. Most of this could be avoided and gradually would be under a properly constituted Department of Public Health.

He pointed out that for the present fiscal year the United States has appropriated for sanitary and health purposes the following amount:

Dept. of Commerce and Labor	$ 533,000.00
Dept. Navy	1,827,428.00
Dept. War	6,400,734.00
Dept. Treasury	2,512,733.00
Dept. Interior	1,748,350.00
Dept. Agriculture	1,275,820.00
Dept. State	3,405.79
Bureau of Public Printer	7,270.00
District of Columbia	663,680.00
	$14,972,320.79

This does not include the service in the Philippines, Porto Rico, Cuba, nor one hundred and fourteen physicians and twenty-eight nurses among the Indians, nor the hundred and odd clerks in the medical division of the Pension Office, nor the medical attention to sick prisoners nor the collection of medical statistics by the Census Bureau.

There are over 12,000 persons employed by the Government in public health and sanitary service not including those in Porto Rico, Cuba, Panama, the Philippines or the Agricultural Department. These agencies should all be consolidated into a new Department, the Department of Public Health.

The Senator closed his speech with the following appeal: "In eight years we have increased our expenditures over the average of preceding years by the huge sum of one thousand millions for the army and navy, and are spending 70 per cent of the national income to cover the obligations of past wars and the preparation for possible future war, or about seven hundred millions per annum. But for war on preventable disease now costing us infinite treasure in life, efficiency, and commercial power and prestige we spend nothing and do not even employ the agencies we have in an efficient manner.

"In the name of the people and in the name of the American Medical Association, whose members are the faithful and self-sacrificing guardians of the health of our people, and in the name of the Committee of One Hundred, of the American Federa-

tion of Labor, of the National Grange, and of the various health boards of the 46 States of the Union and of the great body of learned men desiring improved sanitation and the application of the improved agencies of preventing disease, disability, and death, I pray the Senate to establish a department of public health.

"The principle of the bill meets the general approval of the public-health societies and of the medical associations of the United States, and there should be no difficulty in perfecting this bill and impressing upon the country the importance of organized effort to control the ravages of tuberculosis, typhoid and malarial fevers, bubonic plague, and other preventable diseases, which inflict such enormous injury upon the people of the United States, impose such vast, but needless, human misery and pain, with great financial loss and loss of prestige and power.

"A commercial nation will not be unmindful of the commercial value of the saving of life and efficiency possible, which is worth $3,000,000,000 per annum.

"A humane nation will not fail to act when it is known that we could save the lives of 600,000 of our people annually, prevent the sickness of 3,000,000 of people per annum, who now suffer from preventable disease, and greatly abate the volume of human pain, misery, and death.

"I trust, Mr. President, that the Senate may not fail to take action in regard to this matter at the present session."

Write your Congressman.

THE ENORMOUS WASTE OF HUMAN LIFE

As another argument for the creation of a Department of Public Health we publish in this issue of the JOURNAL a paper read before the Detroit Academy of Medicine by Mr. George H. Cunningham which shows in a striking manner how the United States is behind some of the European countries in certain phases of the subject of actual disease prevention.

We have succeeded wonderfully in reducing the death rate from Diphtheria and various other diseases, and can show a material reduction in the last thirty years in the death rate from all causes in persons under 40 years, but over that age there has been a corresponding increase in the death rate so that what we have saved on the one side of forty we have lost between forty and seventy or thereabout; while in Scotland, England and Wales, for instance, the saving is manifest up to sixty years, and the death rate is not greatly increased above that age. Mr. Cunningham shows that beginning about forty years of age we are now suffering enormous loss of life from Apoplexy, Bright's Disease, and in general disease of the Heart, Kidneys and Arteries.

With a Department of Public Health at Washington the matter could be profitably studied and we should obtain as good results as they have in England.

SUBSCRIPTION AND DUES

The United States Postal regulations provide that any periodical enjoying the second class postal rating must not carry names on its mailing list, that are over six months in arrears. This applies to the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, and means we must go through our mailing list after the June number and eliminate the names of all those who have not paid their dues and subscriptions for the year 1910. The fiscal year of the JOURNAL and of the Michigan State Medical Society is the calendar year. Those not paid before the 1st day of July would therefore be six months in arrears, and there is only one thing we can do. The editor and the Society have no alternative in this regard.

To those of us who are interested in the Medical Defense plan there is still another and a strong reason why we should pay our dues early. The By-Laws provide that those in arrears after June 1st will not be defended in any suit, the cause of action of which occurred while in arrears. This means that for two years we are liable to have a malpractice suit, against which the machinery of defense is not provided, brought against us for some real or fancied act, which occurred between Jan. 1st and the date we pay our dues in this or any other year. It will mean something more than this after our plan has been in force long enough to establish its reputation. It will mean that lawyers bringing this class of suits will seek out the doctor in arrears to his society. That doctor, he knows, is without the protection furnished by the society and must defend himself—or settle.

For these two reasons we urge our members to remit to their County Secretary. Do not wait for him to come to you, for he is busy and should not be required to personally visit every member. We do not wish to remove any names from the mailing list, and we do not wish anyone to be without the means of defense from civil malpractice suits.

COMMITTEE ON REVISION OF THE CONSTITUTION

The present Constitution and By-Laws of the Michigan State Medical Society were adopted at the time of the reorganization of the State Society in 1902. They have been amended at various times as occasion arose. The JOURNAL was established since the Constitution and By-Laws were adopted, and hence is not covered or governed by them. The plan of Medical Defense has been adopted only recently by making amendments to the By-Laws. It has seemed wise to consider a general revision of our Constitution and By-Laws at this time in order to get them in a more concise form. There are a few changes contemplated but these have mostly to do with the governing of the JOURNAL. These latter changes must be made to harmonize with the United States Postal Regulations.

To propose a revised Constitution and By-Laws which will be up-to-date and more concise than the present one, the President, Dr. J. H. Carstens, has appointed Drs. B. R. Schenck, of Detroit, Chairman; Wilfrid Haughey, Battle Creek, and W. T. Dodge, Big Rapids.

This Committee is now gathering data and material and hopes to have the work finished before the Bay City meeting. Any one having suggestions is requested to communicate with the Committee.

COUNTY SOCIETY REPORTS

The JOURNAL was established in September, 1902, for thepurpose of drawing more closely together the members of the County Medical Societies. It was thought that by publishing and distributing to every member of County Societies, the doings of the other County Societies, the interest and enthusiasm of each member could be better kept up. Each man would then know what was being done in other communities than his own. To better further this aim the department of County Society News was established and County Secretaries were urged to report their meetings in the JOURNAL.

We would be pleased to have every County Society in the State report every meeting in these pages. There will be pages enough because the size of the JOURNAL is limited only by the demands made upon it.

The editor for the past four years in his final report to the Council said it had been his policy to publish every scrap of

County Society News that he could lay his hands on. The present editor has done the same and will so continue. He regrets that he has not more appearing this month.

If your County Secretary does not report your meetings, do so yourself. Every Society is entitled to space in that department of the JOURNAL. At the end of this year we shall present a tabulated report showing which County Societies have availed themselves of the pages of the JOURNAL and how often. It should be a matter of pride to each Society not to have a cipher stand opposite its name in that report.

MEDICAL DEFENSE

The Michigan State Medical Society at the Kalamazoo meeting took a liberal view when in adopting amendments to the By-Laws establishing Medical Defense as an integral part of the work of the Society, it allowed each county the option of not participating.

Fifty-one counties have named their member of the Medico-Legal Committee, or have paid defense dues. Three counties have paid their subscription but not the defense dues. The total membership of these three counties is 71. From four counties we have had no official word—and no dues or subscriptions have been paid. These four counties represent a total of 97 members.

Thus we have seven counties that have not actually begun on this defense work, representing 181 of our members.

At this date (April 20) 1107 members of the State Society have already paid their defense dues, and 1143 have paid their State dues and subscription to the JOURNAL, as reported to this office by county secretaries.

This is not as it should be. Every member should have paid his dues and subscription before this and every society should take up this defense work. The furnishing of the machinery for defense is not clearly understood by many. It means that our attorneys have briefed the law as it is interpreted by court decisions and as it applies to civil malpractice. This is a work that is very expensive, requires a lot of drudgery, and brings the cost of privately defended suits to a prohibitive figure. Supplying this brief makes the cost reasonable, and also gives the defendant the full protection of the law.

It is hoped that co-operative Medical Defense as adopted by the Michigan State Medical Society will so educate the public, and especially a certain class of legal lights, that such suits will be brought only when there is legitimate cause, and not with the hope of a settlement. This is an educational achievement greatly to be desired, and should have the active support of every member of the Michigan State Medical Society. Most of us do not need the defense, and probably never will, but we should be willing to donate $1.50 this year and $1.00 a year hereafter to bring about such a hoped for stage of civilization that malpractice suits will only be brought in the rare cases where there is just ground for such suits.

Doctors, first and last, are teachers—the very title means teacher. We should and we must point the way in this as in other matters for the education of the public, and the contribution asked from each is not great.

NEW MEMBERS

There are in Michigan about 1500 physicians who are not members of the Michigan State Medical Society. On advertising page VI of this issue we publish our regular form for Application for Membership, and we request every member

to constitute himself a committee of one to interview those of his confreres not now enjoying the benefits of membership in our society, and urge them to join.

If each one will do this we can almost double our membership this year, and it will take but very little effort. The arguments for joining are many and convincing.

IN MEMORIAM

Dr. Perry E. Tayer, died in Adrian March 25th, after a week's illness with pneumonia.

Dr. Tayer was born March 1, 1883, near Adrian, and has always made that city his home. In 1902 he graduated from the Adrian High School as class president. He studied for a time in the office of Dr. Treat, going to Ann Arbor for his first two years in the Medical Department. His final years were in the Detroit College of Medicine, where for a time he was externe to St. Mary's Hospital. He graduated in 1907 and settled in Adrian, where he soon built up a successful practice. In College Dr. Tayer was associated with the Phi Beta Pi Fraternity. The following tribute is paid him by a daily paper of his home town:

"In the story of a city's daily life there are many tear-stained pages, most of them in these uneventful days, caused by the loss of loved citizens, but not for many years has a death in Adrian been more universally mourned, or the shock of it more widely felt than this, when so fine a man in the very flower of his young manhood, filled with dreams of a future to be spent in ministering to humanity and helping make the world better, is taken away. He was a boy of genial disposition and winning personality and possessed many qualities that made and held scores, yes, hundreds of friends. He was known among the poorer class for his kindness; and many a one has he helped with no expectation of receiving pay."

Dr. Clarence G. Vary, of Battle Creek, died April 7, 1910, of acute Bright's disease. Dr. Vary was born in Calhoun County, Michigan, in 1874. Completing his elementary training in the Public Schools of Battle Creek, he spent three years in Olivet College. In 1894 he entered the Medical Department of the University of Michigan, spending three years there, and took his medical degree in Jefferson Medical College, Philadelphia, in 1898, after which he served one year as interne in St. Timothy's Hospital, Philadelphia. Dr. Vary located in Battle Creek in 1899 and has enjoyed a large practice. He served two years as Health Officer, 1905 to 1907. He was a member of the Calhoun County and Michigan State Medical Societies.

Dr. Geo. M. Bell, of Benton Harbor, a graduate of University of Michigan, 1870, Chicago Medical College, 1871, and Bellevue Hospital Medical College, 1875, and for more than forty years a practitioner of Medicine in Benton Harbor, died March 27, aged 61, of cancer of the spleen.

Dr. Geo. W. Matteson, of Middleville, died of senile debility, Feb. 24th. He was a graduate of the University of Buffalo, class of 1855, and was 88 years old.

Dr. Rollin Carolus Olin, University of Michigan, Homeopathic College, 1877, Professor of Theory and Practice of Medicine in Detroit Homeopathic College, died of cerebral hemorrhage, March 8, aged 70 years. He was a veteran of the Civil war.

Dr. Charles T. Freiberg, a member of the Bay County Medical Society, died suddenly of heart disease at the home of his parents in Bay City, April 1st, 1910. Dr. Freiberg was 29 years old and a graduate of the Saginaw Valley Medical College of Saginaw. In 1906 he was appointed to the Board of Health and served as Health Officer until a few days before his death.

SHOULD A PART OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY BE MOVED TO DETROIT?

The following news item in the February number of THE JOURNAL prompted us to request the opinions of the Regents and others prominent in Medicine in Michigan to express their views in the columns of THE JOURNAL.

"At the last meeting of the Board of Regents, a committee was appointed to investigate the possibilities of removing the fourth year of the Medical Department of the University to Detroit, where better clinical facilities may be obtained."

To the Editor:

I have your letter of February 28, asking me to express, through the columns of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, my opinion regarding the question of the proposed transfer to Detroit of a part of the work of the Medical Department of the University.

Inasmuch as this question is to be ultimately decided by the Board of Regents, I do not think I should engage in a public discussion of the question in advance of the final decision.

Very truly yours,
LOYAL E. KNAPPEN, *Regent.*

To the Editor:

I am in receipt of yours of the 28th ult. relative to transferring to Detroit, part of the medical course.

I do not care at this time to express fully my views on the subject, suffice it to say that the Detroit proposition as submitted, does not meet with my approval.

Yours very truly,
WM. L. CLEMENTS, *Regent.*

To the Editor:

I am in receipt of your favor of the 28th ult. in reference to transferring a part of the medical department to the city of Detroit, and asking my opinion for publication, regarding same. Inasmuch as this matter is one that will have to come to the Board of Regents, of which I am a member, for final action, it seems to me it would be very improper to express any opinion, or to form one, prior to a report of the committee, which should and will be acted on, on the merits of the proposition.

Respectfully yours,
GEO. P. CODD, *Regent.*

To the Editor:

In reply to your request for a contribution on the subject of transferring the Medical Department to Detroit, I beg to state that our committee has not gotten its data together as yet. Until the report is made to the Board of Regents I would not feel at liberty to discuss the matter. Thanking you, I remain,

Yours truly,
JUNIUS E. BEAL, *Regent.*

To the Editor:

I have before me your favor of February 28th asking me to give you for publication my opinion with reference to transferring the last year of the Medical course from Ann Arbor to Detroit. This matter has been referred to a committee for investigation. I am a member of this committee but as we have not made our investigation as yet I am not in a position to express an opinion.

Very truly yours,
FRANK LELAND, *Regent.*

To the Editor:

I have your letter of February 28th, but by reason of the fact that I will be called upon officially to vote on the proposition concerning the Medical Department of the University, it seems to me it would be highly improper for me to express an opinion concerning it at this time. It would hardly be fair to pass judgment on the merits of the case before the evidence is all in and the report of the committee is made.

Thanking you for the opportunity, however; and trusting I may learn the result of your efforts, I remain,

Yours respectfully,
JOHN H. GRANT, *Regent.*

To the Editor:

Your favor of February 28th, to Mr. Chase S. Osborn is received during his absence from the city. It will be brought to his personal attention at the first opportunity.

However, I regret to advise you that he is away from home a great deal of the time, and I cannot say just when he will be in his office.

Thanking you in his behalf for your letter, I am

Yours respectfully,
M. F. HEDRICH, *Secretary.*

To the Editor:

Under the circumstances I do not think it best for me now to discuss in the columns of the JOURNAL the question of increased clinical facilities for the Dept. of Med. and Surg. at the University. I am so directly interested in the solution of the problem, as Chairman of the Med. Committee of the Board of Regents, that I could not at this time give an opinion, and any statement by me, even though I made an effort to discuss it pro and con without committing myself, would prejudice the case and embarrass the Board.

Trusting that you will appreciate my position and regretting that I can not comply with your request, I am,

Yours very sincerely,
WALTER H. SAWYER, *Regent.*

To the Editor:

Your request for my opinion upon the advisability of giving a portion of the clinical instruction of the Medical Department of the University in Detroit, I accede to with pleasure.

As an alumnus of the Medical Department, I would naturally be pleased to have it occupy first place in the affections of the profession of this State. That this is not the case and has not been for several years is due to the fact that the University Hospital is thrown open to all comers for free medical and surgical attendance, who are able to pay the sum required for hospital care. In this way much free professional service is rendered many well-to-do people and the needy poor who should have such service are unable to obtain it because they do not possess the necessary hospital fee. The medical profession, therefore, loses the income from many of its well-to-do patrons and at the same time gives free attendance to many of the needy poor who should be cared for by the State. All this is for the purpose of developing a clinic for the instruction of the students, and I believe a fair clinic in chronic affections has been thus built up. No satisfactory clinic in acute diseases ever has been built up in Ann Arbor and it appears never will be. A really first-class Medical College cannot be built up without facilities for abundant clinical instruction in acute diseases. These facilities can be obtained in Detroit. Great Clinical instructors can be built up in such a city and kept—there. In the past many clinical instructors of eminence have been connected with the University and soon passed on to larger fields. It is not likely that the excellent men of the present staff can be kept there indefinitely. No such frequent changes have taken place among the eminent laboratory workers in the University. I am therefore in favor of the change because I believe that it will eventually mean but *one* Medical College in Michigan and *that* the Medical Department of our University, backed up by a united profession, giving laboratory and clinical instruction second to none in the world.

Very truly yours,
W. T. DODGE.

To the Editor:

I have your letter of February 28th requesting me to take part in a symposium upon the move to have the Medical Department of the University of Michigan removed to Detroit. I thank you very much for the invitation, but I hardly think it would be good taste for me, an official of the University, to take any active part in the symposium. This would be as far as my official position is concerned. Personally, I do not see why the question should be raised at all. The only excuse would seem to be that we are lacking in clinical material. The fact of the matter is that far more patients apply at the University Hospital than can be admitted. What is needed just now are more hospital facilities. Two hundred seventy-five beds entirely devoted to clinical teaching hardly seems enough to take care of the many patients who apply.

If you are interested in the opinion of others outside of the State in regard to the question of the removal of any part of the Medical Department, I would refer you to the last report of the Carnegie Foundation.

Very truly yours,
REUBEN PETERSON.

To the Editor:

You certainly deserve a great deal of credit for conceiving and developing the idea of obtaining a consensus of opinion, concerning the removal of a portion of the medical school, from Ann Arbor to Detroit.

It is a subject which I have studied a great deal for several years, and I have reached the firm, unshakable conviction, that the training of the senior medical class during a part of their course, in Detroit, among the hospitals and dispensaries, is a most excellent thing for such students and also a good thing for the profession. Furthermore, it will redound to the benefit of the laity, as well as the University. A purely clinical school for the University, in Detroit, therefore, is a much needed improvement in my opinion.

Very sincerely yours,

E. L. SHURLY.

To the Editor:

Relative to your communication of the 7th inst. concerning the advisability of removing the University of Michigan Medical Department to Detroit, I cannot write specifically on account of lack of thorough acquaintance with local conditions, but only in a general way I realize how great the value of greatly increased clinical facilities would be for men in their final years.

Respectfully,

F. MCD. HARKIN.

To the Editor:

In reply to your letter asking for my opinion, I am glad to make plain and emphatic that I am unqualifiedly opposed to removing the Medical Department of the University, or any part of it, from Ann Arbor. I stand for the unity and indivisibility of the University.

Sincerely yours,

A. W. CRANE.

To the Editor:

Your letter asking me for my opinion to be expressed in the symposium in the MEDICAL JOURNAL, as regards the advisability of removing the Medical Department of the University to Detroit, came to hand during my absence in Detroit. In reply would say that inasmuch as I am Chairman of the Committee appointed by the State Medical Society to report at its next meeting on the Relationship of the Medical Department at Ann Arbor to the medical profession at large in the State, it would seem to me premature for me to express my opinion publicly until after the report of the Committee had been given to the State Medical Society; otherwise, I would be only too glad to comply with your request.

Yours respectfully,

E. T. ABRAMS.

To the Editor:

The Michigan University ranks so high in parts that it is a source of regret that the Medical Department has not been made a more distinguished part of the whole.

The teaching force in the Medical Department is not at fault. It contains men of great ability—men noted as instructors the world over. The handicap lies in clinical material. Sufficient clinical material cannot be secured in a center so limited in population as Ann Arbor. This handicap affects both instructors and instructed.

The student loses time and so loses money. He does not get value received. A student today sees before him many fields to enter, where formerly there were but one or two. He must be given that which will save time and labor in order to enable him to gather in from the greater territory.

We are rapidly approaching a revolution in didactics. The methods of education at their best are too burdensome for this age. In the educational field there is too much of "bricks without straw" work. Our educational methods belong too largely to antiquity. There clings to them the musty odor of the middle ages.

The Sidis incident at Harvard is showing the dawn of the new educational day. It reveals methods—largely objective—which can secure a better working knowledge in one-third to one-half the time now used. An object lesson "gets there" while description lags. Educational work needs more air lines.

We have aimed in our commonwealth to stand for the highest in all educational matters.

Methods which most rapidly and efficiently will interest our students in medicine must be adopted. The good of the student body medical must be paramount.

The objective teaching arising from abundant clinicial material is a crying need.

The Harvard Medical School has, in Boston, a yearly clinic, conveniently accessible, of half a million people. The Michigan University School of Medicine, if moved to Detroit, would have similar advantages and would practically

be no more separated from the main university than is the Harvard Medical School in Boston from the Harvard University at Cambridge.

Yours truly,

C. B. STOCKWELL, M. D.

To the Editor:

I am exceedingly sorry that you have decided to publish a symposium of opinions regarding the removal of the last year of the Medical Department of the University of Michigan to Detroit. A committee from the Board of Regents has been appointed to investigate this matter. I do not believe that it would be wise to discuss it, at present at least, in the JOURNAL.

Yours truly,

V. C. VAUGHAN.

To the Editor:

You have been kind enough to ask some expression of my opinion regarding the removal of the last two years of the Medical course now given at the University of Michigan to Detroit. I feel some degree of freedom in complying with your request, now that I shall soon retire from the practice of medicine—freedom I have not heretofore felt from the fact that my opinion, in some quarters, might seem to be prejudiced on account of the peculiar circumstances attending my resignation from the Faculty of our State University some six years ago.

It might fairly be thought that I am acquainted with the conditions at the University, since I served there for 17 years—and with equal fairness it may be taken for granted that I am acquainted with medical conditions in Detroit, since I have been on the Consulting Staff of Harper Hospital following my resignation from the University—my opinion therefore is an unprejudiced one, and I am absolutely independent in its expression.

It must be assumed that only a small minority of the medical men of the State really know all the conditions existing at the University. They will tell you that Ann Arbor is a small city and cannot therefore furnish a clinic sufficient to demonstrate first class Medical Teaching. They do not consider that almost every State in the Union is represented in the clinical attendance at the University, and that all those who come to it give up their individuality, and become patients for the sole purpose of study and experiment by the students—they get free advise and treatment because of this. The Hospitals at the University have the largest attendance of any Hospital in the State, and the largest number of beds. The students are in residence at the University, and when emergency cases come in the entire class can be, and is, summoned to witness and assist in whatever is done, whereas in a large city like Detroit the students are scattered, and cannot be convened immediately. The Hospitals at Ann Arbor are for the use of the student—the Hospitals in Detroit are all of a private nature, the patients are for the most part private patients, who will not allow themselves to be examined, studied and treated by students, and although I have been in attendance at Harper Hospital almost daily for several years, I have never seen a class of students following a professor from bed to bed, as is a daily custom at Ann Arbor. It is not so much in the number of clinical cases presented, as the manner of such presentation, and the opportunity afforded the student of watching the case through the whole course of its illness.

There is of course a wealth of clinical material in Detroit, but there is no way of properly using this material as conditions now exist, nor is there likely to be for some years to come. When Detroit has a large modern Municipal Hospital and this hospital is placed in the hands of a Board, not of Regents especially, but a non-political Board, who are competent to manage and direct such an institution, who will not destroy the practice of private physicians, by admitting to a free clinical service those who should pay for treatment, and when conditions are arranged so that such an institution shall not be run for the personal aggrandizement and furtherance of relatives of those in charge; when living salaries may be paid to competent teachers, in order to remove them from the necessity of eking out a miserable existence by practicing medicine in a private way; when men totally unfit for such positions will not be allowed to hold professorships of prominence; when the vast amount of clinical material in Detroit will be used without prejudice and harm to the private practice of private physicians, then and not till then it will be of advantage to remove the last two years of medical teaching from Ann Arbor. Excellent work is done at our State University by most of the faculty. It can be bettered by giving freer rein to the teaching force by the Board of Regents, who are without experience, and void of good judgment in the matter of the professional training of students. I am therefore of opinion that the teaching of medical students during their junior and senior years, should be conducted as it is now at the

University, where young men may get not medical instruction only, but where residence will give a broader culture which can only be found at a large seat of learning, such as exists at the University of Michigan. I have refrained from expressing myself on this subject since leaving the University, but at this time when I am so soon to retire from the practice of a profession in which I have been very active for 30 years, surely I may give utterance to an opinion unbiased by prejudice of the feeling that dependence upon this organization, or that clique, or individual, will shape it in any way.

Yours very truly,

FLEMMING CARROW.

To the Editor:

I would not be in favor of having the last year or two of the Medical Department of the University of Michigan moved to Detroit for several reasons.

First. The life of students and instructors in a place like Ann Arbor is much more conducive to scientific work than in a place like Detroit.

Second. The Chief of each clinical department maintains control and is better able to carry out a well conceived plan of education under present conditions than if his authority were more or less divided, as under the proposed plan.

Third. As I understand it, the placing of the Medical Department at a distance from the University is a plan that has been tried in other places and has not been very successful.

Fourth. I believe the idea of more extensive and diverse clinical material has been largely exaggerated. It is not necessary that a student should see *all* the diseases to which human flesh is heir in order to become a good physician. The present clinical material is ample for the demonstration of the principles of diagnosis and therapeutics.

(Signed)

RICHARD R. SMITH.

COUNTY SOCIETY NEWS

CHIPPEWA

At a meeting of the Chippewa Co. Medical Society held at Sault Ste. Marie, Michigan, March 1st, the following paper was read.

MODERN THERAPEUTICS or DRUGLESS THERAPY.

J. N. Rogers, M. D., Sault Ste. Marie.

Mr. President and Gentlemen:

I did not realize until after I had begun this paper what a task I had undertaken. It would require six such papers to cover the ground thoroughly and I fear I shall be accused of Heterodoxy by some of my very exclusive regular confreres, but I am so good an orthodox n medicine that I want the regular to know and master all that is good in the healing art. If I had a patient whom I have failed to cure in the regular orthodox way and I felt convinced that any other will help him, I should not hesitate to try it even to using Peruna or Lydia Pinkham's.

It makes me feel foolish to learn of osteopaths and chiropractors doing what regularly educated physicians have failed to do, but this has happened right here in this town, and we may as well all stand up and plead guilty, for it touches all of us.

By rational (or regular) therapeutics I make no references to any sect in medicine. In the treatment of disease we must formulate a platform broader and more liberal and on a more exalted plane than is afforded by any sect or school. We must avoid narrowness, egotism and intolerance, and always carry a receptive mind of such breadth and scope that we can recognize and assimilate good from any source.

Our schools still make the mistake of allowing students to absorb the idea that drugs are the sole reliance in the practice of our profession. Men leave our best colleges without the knowledge of Electrotherapy, Hot Air Treatment, Osteopathy, Homeopathy, Hydrotherapy, the various religious movements, as Christian Science, Dowieism, Emmanuel Movement, etc. There must be some good in all these or they never could have commanded the following we know they have. Would it not be better for us to search out the virtues within these practices and cults and learn to treat a sick person by

the most approved methods known to any branch of medicine, rather than to accustom ourselves to think of a certain drug whenever a certain symptom or disease presents itself to our attention?

Sectarian Medicine has no place in modern Rational Therapeutics. The man who refuses or fails to employ a given agent or drug which he knows to be best for his patient it too narrow in his views to become a successful practitioner of the great science of Medicine. The trouble with so many men s they know so many things that are theory only and they say, "I have proved my theories by my experience," but what if the theory was wrong? What then about the results? Whenever a man gets to the position where he is no longer capable of learning, he has no place in the ministration to the sick but needs treatment himself for the condition of his mind.

Christian Science being diametrically opposed to everything scientific, and, in practice, idiotic and ridiculous, teaches the great influence of the mind over mental illnesses. It is a practical demonstration of the power and worth of optimism militant. The enthusiasm in "treatment," which impels success because it is blended with and interwoven among falsehood, ignorance and superstition, is no reason why we cannot take the kernel of truth it contains and apply it beneficially to our patients. Dooley says, "If Christian Scientists had a little more science and doctors had a little more religion it would not matter much which we called so long as we had a good nurse."

If regular physicians were as familiar as they should be with Aerotherapy, Electrotherapy, Hydrotherapy, Psychotherapy, Climatotherapy, Massage and such manipulative measures, there would be no field open for such an army of blatent impostors who are taking advantage of the present lax medical practice acts and getting into professional work (not practice). These are not educated, intelligent men, but a horde made up from the barbers, butchers, clerks and bartenders who drop their tools one day and hang out their sign the next as an osteopathist, chiropractic with the degree of D. O. or D. C. or some other high sounding title. These titles are granted without a particle of school training and yet they claim to be able to look over the body as a watch maker would a watch and "fix it." They claim surgery is hand work. As Osteopathy is hand work it is truly Surgery without the knife, and the ever growing number of malpractice suits due to wrong diagnosis and barbarous manipulations with permanent crippling, chronic disease, and even death, speak louder than words. Yet some States like California legalize and license Osteopathy and allow them to practice obstetrics and surgery, besides manipulat ve methods. Operative Surgery is supposed to be taught in the Philadelphia College of Osteopathy

And What About Chiropractic?—It out-fakes all the others and yet we must admit with a certain degree of humiliation that cases have been benefited by these methods, crude as they are, that we failed to cure by ordinary methods. Therefore we must admit that there is some virtue in them in selected or suitable cases, but their extravagant claims to be able to cure anything from clap to cholera morbus bring it into disrepute in time.

If we do not show up the absurdity of their claims the people will be a long time in discovering it for themselves. As a matter of fact they are but feeble imitations of Scientific Massage—Swedish Movements as taught for fifty years in the University of Upsala in Sweden, and if we were as familiar with these as we should be there would be no need for Osteopaths or Chiropractors. . . .

The subject of Spinal Therapeutics has received less attention from the medical profession than it deserves. Even the laity know that cold applied to the neck may arrest nose bleed, and that heat applied to the small of the back may hasten menstruation. The profound and far reaching physiological truths which underlie these simple phenomena have either been ignored or only given inconsiderate attention. Others, less scientific but more astute, have determined empirically that manipulation of the spine does sometimes cure conditions that have failed of cure in the hands of experienced physicians. So it has come to pass that schools of practice exploiting spinal manipulations as a cure-all have arisen. Neither the fury of the tongue nor the truculence of the pen can gainsay the confidence which these systems of practice have inspired in the community. You need go no farther than your own city. We have had two of those impostors come in here and do business from the start, take the money that rightfully belongs to us and get the cash from people who owe half the doctors in town.

I was led to give more attention and deeper study to Spinal Therapeutics some three years ago, from a report made by the Board of Health

in New York City in which they claimed that 80% of the school children in New York had spinal curvature and gave defective vision as one of the chief causes. Any physician that passes this subject over lightly as being unworthily simple, will find upon further investigation that the study of Spinal Therapeutics and successful practice of Spondylotherapy requires knowledge, observation and experience of the highest kind and is comparable to the best effort in any other department of scientific medicine. It is our duty and our privilege to lift this whole subject of Spinal Therapeutics out of the low state in which it blunders onward, hitting or missing as the case may be; of rescuing it from the lowly esteem which physicians as a class have felt for it, and if possible, put it in a plane befitting its scientific importance, and recognize its practical helpfulness in disease.

Any method of cure which is more or less new, is inclined to be observed critically and so it should be. "Keep all knowledge open for revision" is a good rule, but abandon fixation and get out of the ruts. There is something good in Osteopathy. Ling demonstrated this one hundred years ago and yet the quackery and villainy with which it has been surrounded has brought it into disrepute with the profession. There is some good in Christian Science and yet how many have condemned that as absolute rot. (Before you misunderstand me I will say the only good in Christian Science is hopefulness, and turning the mind away from imaginary ills, and even more, from real ills.)

Hydrotherapy—Let us pause a moment to emphasize the value of Hydrotherapy not only in Typhoid Fever *per se*, but as a preventative of after vascular damage. Hydrotherapeutics in fever, controls the formation and favors the elimination of toxins; preserves and increases the elasticity of the arteries and is a true preventative of subsequent sclerosis. Typhoid Fever, I consider the most prolific cause of this disease.

The physician of today must have a knowledge of many things besides medicines and drugs, and so, many medical colleges demand from one to four years academic college work as an entrance requirement. As a result of this a marked improvement can be noted on every hand. There are 141 medical schools in this country, some being high grade, some good and some poor, but the law of the survival of the fittest is rapidly eliminating the poorer ones. No man in this country needs a more liberal education than the man of medicine. His work leads him into the realms of science not bounded by drugs, bacteria, and surgical instruments. While the physician is being perfected educationally, his patient is becoming better grounded in things medical. Some of the knowledge comes from the physician, some from the teacher in the public schools, some from every day reading, and some unfortunately from imbibing the untruths appearing in the patent medicine and quack advertisements, and the distorted quasi-medical stories in the public press. This works positive injury to the patient and a hardship to the doctor who is trying to be honest with his patient as well as himself. It does seem as though the people should be educated by the profession, acting through the Medical Society.

Massage—Is derived from the Greek word *μάσσειν* or the French *masser*, meaning to knead. A male operator is called a masseur and female, masseuse. Massage is a scientific treatment by certain passive systematic manipulations upon the nude skin of the human body. Dr. Mesger, who is largely responsible for this system, says that an uninstructed person cannot pick it up,—it is an art not to be self-acquired. All movements are passive and manipulations systematic. He divides the Massage Treatment into four principal manipulations. The Swedish School recognizes definite areas of spinal tenderness identified with the various organs—thus, in affections of the stomach tenderness is observed in the region of the 6th, 7th and 8th Dorsal nerves on the left side and manipulation of this region often evokes eructations of gas.

In the presence of abdominal pain the surgeon who uses his head as well as his knife thinks of appendicitis, but when he uses his knife to the exclusion of his head he thinks of nothing else.

Mental Healing or Psychotherapy—Great confusion and greater diversity of opinion still exist among those so-called Mental Healers. Many still cling to the theory of the old clock maker, Quimby, "Think right and you will be right." Mrs. Eddy, who was a patient and pupil of Quimby, after investigating and theorizing, and testing her own powers as a healer, formulated a theory of her own which as an ultra-idealistic philosophy easily heads the list. While we cannot here undertake to show the many inconsistencies of the new religion or consider its value as a therapeutic agent we

cannot resist a feeling of admiration for the courage, determination and tireless energy displayed by Mrs. Eddy in her labors to gain a hearing, and the success attained in a few years by a woman advanced in years, grey, gaunt, sad, pathetic and hungry looking, practically alone in the world and without means. In 1882 when Mrs. Eddy settled in Boston she had less than 100 followers. In the entire country today they have 100,000, and still growing.

The New Thought Movement has grown side by side with this sister movement and numbers almost as many, although they have never become organized into a religious system. It differs from Christian Science by refusing to deny the reality of the physical universe but looks upon the visible universe as an expression of the power of God. It upholds an idealistic interpretation of life, it affirms the supremacy of mind over matter, and that by the influx of man's spiritual consciousness the mind is renewed and the body strengthened and made whole. So likewise with disease, suffering and sin, the reality of which is conceded by the New Thought (but denied by Chrictian Science) while claiming they may be overcome by "the introduction of true thought into the mind of man." The introduction of this "true thought" into the minds of patients, thereby curing them of disease, is in reality the old original Quimby idea, "get yourself thinking right and you'll be right." The father of the New Thought Movement was also a patient and pupil of Quimby named Evans, a man of talent and education.

Moreover, its explicit recognition of the material side of life has commended it to a more intelligent class of believers who hold the tenets of Christian Science in contempt. The principal reason for its success is found in the fact that notwithstanding its doctrinal conditions and extravagances, it has proved sufficiently "workable" to justify, in the opinion of its adherents, the extreme claims it puts forth, and while it is true that the New Thought healer has been guilty of much serious malpractice, it is equally certain that he has effected cures in cases pronounced hopeless by orthodox practitioners. In many instances we know the followers of these two sister movements appear to gain greatly in health and happiness, and get a new lease of life. All this of course continues to win new recruits for them, and even the skeptical must admit the fact "that there may be something in them after all." It is our business to find out what that "something" is.

In order to appreciate just what that something is and to understand why Christian Science and the New Thought on their therapeutic side are so strangely compounded of success and failure, it is necessary to study the progress achieved by an altogether different type of mental healing. Men of scientific temperament and training have directed their efforts according to their understanding, to build up a system of psychotherapy based not on mystical speculation but on exact knowledge. In fact were it not for them psychotherapy, so far as concerns comprehension of its workings, would still be pretty much where it was in the dark ages of Mesmer.

These men have been quietly investigating, and experimenting, and have made remarkable headway in a comparatively short time in fathoming the processes of mental healing and in determining its proper place in the practice of medicine. The labors of these men began about thirty years ago and have continued to the present time. Dr. Charcot of Paris has perhaps done more than any other one man to establish the power of suggestion as a healing agent applied during the hypnotic state, as it was found to be more effectual and more permanent than when applied at other times. It seemed a legitimate inference that there existed a close relationship between the psychical and the physical in man, and in view of the effects of hypnotic suggestion on the physiological processes, it was possible that many maladies apparently physical in character had their origin in some psychical disturbance, and could best be treated by psychical means.

Some very brilliant results were achieved in the treatment of hysteria and other nervous disturbances where ordinary methods had failed. But what is very important here is the fact that the efficacy of suggestion itself often depends on the precision with which a diagnosis is made, and the secret psychical cause of distress brought to light. Nor would suggestion succeed if "dissociation," as it is called, had progressed so far as to involve radical destructive changes in the nerve cells, rendering the malady "organic" instead of "functional," for as the psychopathologist frankly admits, suggestion is powerless in the presence of all organic diseases whatever their origin, or is useful only as an auxiliary to other treatment, chemical, or surgical. Some hysterical affections are easily mistaken for

other troubles and operated upon, as Dr. Pierre Janet pointed out in a course of lectures a year or so ago delivered at the Harvard Medical School. "It is impossible to estimate the number of operations that have been performed to remedy conditions which really called for treatment by Suggestive Therapeutics." While hypnotism is still considered useful as an aid to diagnosis it is used very little now therapeutically as the laws governing suggestion are better understood. We are largely indebted for this advancement to an American Psychopathologist, Dr. Boris Sidis of Brookline, Mass., whose book on "The Psychology of Suggestion" is indespensible to a clear understanding of the subject. But whether they utilize hypnotic or non-hypnotic suggestion, all scientific psychotherapeutists are agreed in recognizing that suggestion has its limitations, and that within those limitations it is necessary for the suggestionist to be thoroughly grounded in the psychological principles governing the action, in order to be able to apply it with any certainty of success. Herein is the great difference between scientific psychotherapy and that practiced by Christian Scientists and New Thought healers.

Where the latter succeed they owe their success to the influence of suggestion, and where they fail it is because they ignorantly treat disease not susceptible of cure by suggestion; or because in cases where a cure may be wrought they lack the training and the knowledge to make a precise diagnosis, ascertain the true cause of the disorder and apply the proper methods as used by the educated and scientific practitioner. Suggestion even when unguided by scientific knowledge often works wonders by imbuing the patient with a lively faith and hope in the possibility of regaining health, and by appealing to the religious side of man's nature, they gain great power to inspire hope and courage. So long as they can do this, it matters not how erroneous their doctrines may be, the result is the same. There is always the danger that one's trouble may be organic instead of functional, in which event, however strong his faith, "his last state would be worse than his first."

It is to avoid this danger and at the same time to take advantage of the therapeutic potentialities inherent in sincere religious conviction as proved by Christian Science and New Thought experience that a new system of mental healing called the Emmanuel Movement is said to have been formed or developed quite recently. It originated with two Episcopal clergymen of Boston named Drs. Worcester and McComb, men of scientific and theological training, who felt that in psychotherapeutics there was a field in which the clergyman and the physician might work hand in hand. Enlisting the co-operation of several well known neurologists they opened a clinic in their Church in Boston in the fall of 1906 and still maintain it in constant operation. All patients coming to them for treatment are first required to undergo a medical examination at the hands of competent physicians, and if their malady is one requiring medicine or surgery they are promptly referred to a physician or surgeon as the case may be. This of course is a big advance over all other religious healers, and brings it nearer the realm of the regular practitioner, and opens the way for the physician to step in and occupy the field so long neglected by him, and left for the charlatan and the religious fanatic to fatten upon the credulity of a deluded people. There is no peculiar piety involved in the use of suggestion and it can be used apart from all religious thought or feeling although these are sometimes helpful adjuncts.

This movement has met with bitter opposition within and without the church, and is denounced as a radical, unnecessary, useless and harmful departure from the work of the ministry. "Cranks, Faddists, Quacks" are some of the pleasantepithets bestowed upon the Emmanuel practitioners, while from the medical profession comes a vigorous protest asserting that physicians should be permitted to use suggestion for therapeutic purposes. This is true, but it is because the medical profession has signally failed to profit by the discoveries of the psychopathologists, and through their attitude of contemptuous indifference they are themselves largely responsible for the successful development of non-scientific systems of psychotherapy. The labors of Dr. Morton Prince and Dr. Boris Sidis, of whose contributions to the present day understanding of the possibilities and limitations of suggestive therapeutics America should feel proud, have been studiously ignored despite the fact that in the healing achievements of the Christian Scientists and New Thoughters the Medical Fraternity ought long ago to have found an incentive for studying and utilizing psychotherapy on their own account. It has remained for the Emmanuel Movement to galvanize them into belated action and in the establishment of psychopathological hospitals and clinics, and of chairs of psychopathology, in our medical

schools, we witness the dawning of a new and wiser era in the practice of medicine.

For this much Drs. Worcester and McComb are certainly deserving of the warmest gratitude of the supporters and opponents alike. Yet it must be said that as a therapeutic system the movement they have sponsored is fraught with grave possibilities of danger to the community. It cannot be too firmly kept in mind that no one is really competent to practice psychotherapy unless he is thoroughly acquainted with the laws of suggestion, and dissociation, as revealed by the psychopathologists and has undergone a careful training in the methods of psychical diagnosis. Otherwise he must proceed in a bungling, haphazard way, and with the best intentions in the world is certain to make serious mistakes.

This applies equally to medical men who have neglected to take the training, as many of them are no better qualified to use suggestion scientifically than Christian Scientists or New Thought healers. Now it is not the object of this paper to make converts for any of these cults referred to, but if possible to awaken some little interest in this long neglected field of therapeutics.

GRAND TRAVERSE

The regular meeting of the Grand Traverse County Medical Society was held April 5, 1910, at the Northern Michigan Asylum. Twenty members were present. Dr. Epperson and Dr. Gregory were present as guests. Dr. Rosenthal Thompson was elected to membership in the society. A motion was passed that a committee be appointed to confer with representatives of he mothers' clubs, and the superintendent of schools in regard to school inspection—Drs. Rowley, Lawton and Holliday. A letter was read from the Committee to encourage the systematic examination of the eyes and ears of school children. The chair appointed Dr. J. M. Wilhelm as the county representative on this committee.

A paper entitled "The Etiology of Syphilis" was read by Dr. Wells with microscopical demonstrations of the Treponema Pallidum.

Dr. Moon gave an interesting talk on the symptoms and treatment of Syphilis. A general discussion followed. The Wasserman reaction and the various modifications were discussed. Dr. Branch mentioned a case in which he got symptoms of mercurial poisoning as a result of constipation in the patient. Most of the physicians seemed to favor mercurial inunctions in syphilis.

Dr. Johnson read a paper entitled "Parasyphilitic Diseases." After discussion of this paper the meeting adjourned and the members were entertained by the Asylum staff with a luncheon.

R. E. WELLS, *Secretary.*

INGHAM

Ingham County Medical Society held its regular bi-monthly meeting at Lansing, March 10, 1910, at 8:00 p. m.

Dr. David Inglis gave the paper of the evening, Thyroid, and its Relation to General Practice. It was followed by a general discussion.

Fourteen members of Jackson County Medical Society were present, also one from Clinton County Society. A lunch to thirty-six members and visitors was served, following the meeting.

SAMUEL OSBORN, *Secretary.*

MARQUETTE

The regular monthly meeting of the Marquette County Medical Society, was held in Marquette on Wednesday night, March 23. Dr. T. A. Felch of Ishpeming read an interesting paper upon Arterio Sclerosis. He states that after the age of forty-five, whatever disease a person may be suffering from, the symptoms of the disease may be greatly modified and the prognosis made much more unfavorable by the presence of a general diffuse Arterio Sclerosis. In the etiology are mentioned gout, uremia, the food, syphilis, tobacco poisoning, worry and alcohol. Of the foods, meat is especially mentioned as a powerful and frequent cause of the disease. Heavy manual labor is also productive of this disease. To determine the effects of substances or food stuffs on the arterial coats he asks the question: Does it raise the blood pressure? Judged by this, alcohol does not raise the blood pressure, and whatever sins it may have to answer for, it is fairly free on this count. As to coffee and tobacco, they both increase the blood pressure. Their effect is the same as the excess ingestion of nitrogenous food like meat. To sum up: Coffee, tobacco and meat stand convicted on all counts in the production of Arterio Sclerosis.

Under symptomatology: The one symptom which ranks all others is that of Angina Pectoris. The recognition of symptoms of angina lies in the fact that often they are the first symptoms of which the patient complains and occur

at a time of the trouble where wise counsel may avert disaster. Many ot the indefinite and fleeting perceptions of discomfort or distress, located not alone about the regions of the heart, but in any part of the body, may be anginal. He has had two cases, both old men, with markedly rigid arteries in whom the pain was located in the right shoulder. The treatment is of most avail in the presclerotic stage. The disease is well along when you can make out the rigid vessels. Tests for renal and hepatic insufficiency should be made to aid in the diagnosis.

In the presclerotic stage correct habits of living are of great importance.

In the stage where the rigid vessels can be palpated, but the metabolic processes are fairly well performed and compensation is still good, drugs are indicated. If headaches and precordial pains are present the iodides are of great value. They act by reducing the blood pressure, by reducing the viscosity of the blood. They must be given in small doses long continued and closely watched. The nitrites reduce the pressure and equalize the circulation.

Morphine is invaluable, never forget it. In the low pressure cases, generally the senile cases, Strychnine, Spartein, Camphor, etc. The patients should exclude meat and meat extracts from their diet or at least use them only sparingly. Coffee and tobacco are especially forbidden.

The author sums up his paper by these words, "The purpose of all these thoughts is not the prolongation of life as measured by years alone, for senility is a wearisome thing, but that we may by conserving the energy of middle age 'renew our youth like the eagles' and have enough to keep all the faculties of mind and body in good condition until a natural death by old age overtakes us."

Dr. L. L. Goodnow reported a case of normal labor with separation of the symphysis pubis and sacroiliac articulation. He says that in the latter part of the labor he noticed a distinct crack which puzzled him. He did not notice the condition until the next day when the patient complained of pain upon moving the leg which led him to examine her. The literature says the condition is uncommon in normal labor. The separation of the symphysis in normal labor has been seen by Vandeventer, Felch and Sheldon.

Upon formal ballot Dr. McCrory was unanimously elected a member of the Society.

H. J. HORNBOGEN, *Secretary.*

MUSKEGON-OCEANA

Regular meeting of the Muskegon-Oceana County Medical Society was held at the residence of Dr. George S. Williams, Friday evening, March 18, 1910, at 8:30 o'clock.

Members present were Drs. W. L. Griffin of Shelby, R. G. Olson, A. A. Smith, Jacob Oosting, W. A. Campbell, F. W. Garber, J. F. Denslow, F. B. Marshall, C. P. Donelson, J. T. Cramer, W. P. Gamber, G. J. Hartman, Geo. S. Williams, I. M. J. Hotvedt, and V. A. Chapman of Muskegon.

Meeting was called to order by the president, Dr. J. F. Denslow. Dr. Garber presented a clinical case, a recovery following Empyema of the Thorax, in which Bismuth Paste was used.

Dr. Williams read a paper upon "Diabetes Mellitus." Discussion was opened by Dr. Jacob Oosting, followed by general discussion.

Meeting adjourned at 10:30 to Luncheon and Smoker.

Regular meeting of the Muskegon-Oceana County Medical Society was held at the office of Dr. J. T. Cramer at Muskegon, Friday evening, April 1st, 1910, at 8.30 o'clock.

Members present:—Doctors J. F. Denslow, G. J. Hartman, Jacob Oosting, I. M. J. Hotvedt, A. A. Smith, George S. Williams, L. N. Eames, L. I. Powers, R. G. Olson, W. A. Campbell, W. P. Gamber, J. T. Cramer and V. A. Chapman.

Minutes of last meeting read and approved as read.

Dr. Cramer read a paper upon "Joint Tuberculosis." The discussion was opened by Dr. Hotvedt, and generally participated in.

Meeting adjourned to meet in two weeks with Dr. I. M. J. Hotvedt at Muskegon.

V. A. CHAPMAN, *Secretary.*

OTTAWA

The April meeting of the Ottawa County Medical Society was held April 12th at the office of Dr. N. H. Kassabian, Coopersville, Mich.

Dr. Wm. DeKleine of Grand Haven, read a paper on "Serum Therapy in the Prevention of Disease." The paper covered the entire field of Serum Therapy and gave an outline of the Bacterial Vaccines. The paper was well received and very freely discussed.

Dr. N. H. Kassabian presented a case of gunshot wound of the shoulder which had been presented at a former meeting of the Society.

Dr. Boyer of Coopersville, reported a case of

Gall-stones occurring in a woman 74 years old, and showed specimens of stones which were taken postmortem.

The May meeting will be held in Holland. Dr. B. R. Corbus of Grand Rapids will read a paper on "Intestinal Toxemias and their relation to Diseases of the Kidneys." Dr. Kassabian will read a paper on "An Undeveloped Field in Medicine."

G. H. THOMAS, *Secretary.*

NEWS

Dr. H. Kremers of Holland, has returned from an extended visit to Washington, D. C., where his son Dr. E. D. Kremers, the former Secretary of the Ottawa County Medical Society, is at present located in the Army Medical School.

Dr. T. A. Boot has returned from Florida, where he spent a part of the winter and has resumed his practice in Holland.

About twenty-five members of the Battle Creek Medical Club met at the Arcade Lunch rooms Tuesday evening, April 12th, at a three course luncheon, followed by a pleasant hour relating interesting travel experiences by several members.

The marriage of Dr. W. S. Walkley of Grand Haven and Miss Louise A. Lillie took place March 30, at the home of the bride's parents, Mr. and Mrs. Warren Lillie Lowell. The bride has been principal of the grammar department at Hastings for three years and formerly was an instructor in the Grand Haven schools. Dr. Walkley has been U. S. Marine Surgeon at Grand Haven and also is Health Officer and City Physician there. Dr. and Mrs. Walkley left at once for their home at 114 South Fourth Street, Grand Haven.

Dr. Gregory has moved from Harrietta, Michigan, and taken up practice in Traverse City.

Dr. Johnson has resigned from the staff of the Northern Michigan Asylum and taken up practice in the city.

Dr. Ada Epperson has been appointed woman physician to the Northern Michigan Asylum.

Born on April 10th to Dr. and Mrs. W. A. DeFoe, of Otisville, a son Paul, weight 7 1-2 pounds.

Dr. Wadsworth Warren of Detroit, has given up his practice of Medicine to enter the Automobile business, assuming a position in the administration office of the General Motor's Company.

Dr. Warren graduated from Olivet College, and the University of Michigan Medical Department in 1889. After graduating he spent several years in Europe, and settled in Detroit in 1896, where he has enjoyed a lucrative practice and a wide acquaintance.

Dr. Walter T. Cree of Detroit, has returned from Florida, where he has been convalescing from an attack of pneumonia, which started the 11th of December. The doctor has fully regained his health and we are glad to announce is in the harness again.

Dr. and Mrs. John D. Hastie of Grand Rapids, lost their only daughter, Elizabeth, who had broncho-pneumonia, followed by empyema and other complications.

Dr. H. A. Powers of Battle Creek, was elected to the Common Council, April 4th.

Dr. Cecil Vaughan, has removed his office to 1206 Woodward Ave., Detroit.

The new eye, ear and throat hospital of the University of Michigan, will soon be opened. It will be one of the finest of its kind in the country. The building in which it is to be housed, located north of the surgical ward of the general hospitals, is now in the hands of the painters and as soon as they complete their work the equipment will be installed.

The building is fire proof and modern in every detail. It is four stories in height, 98 feet long by 48 feet wide.

The first floor will be devoted to out-patient work and to instruction. On the second floor well be the operating rooms, and the wards for female patients. The wards for men and for children will be on the third floor. In all there will be forty beds. On the top floor the internes will be housed. The building will be connected

with the main plant by means of a tunnel or by a one story corridor.

Among the interesting features of the new hospital will be the fine scientific laboratories and the large demonstration rooms. The arrangement of the operating rooms is excellent. A steam-tight room has been provided in which hospital furniture and fixtures can be sterilized by steam under pressure. The equipment will be such as not only to render the best possible treatment to patients, but will afford opportunities for the most advanced scientific research.

Dr. Virgil Tupper of Bay City, Vice-President of the State Society, left with his family Thursday, March 3rd, for a trip abroad. Two weeks will be spent in Italy, resting and sight-seeing, after which the doctor will visit Prof. Bier's clinic in Berlin. From there he will go to Vienna and to Kocher's clinic in Berne, Switzerland. Following this a considerable time will be spent in the hospitals of London. The doctor will be gone about four months.

Dr. John McLurg of Bay City, left on Wednesday, March 30th, with his family for a five months' stay in Europe. The doctor will spend about two months in the hospitals of London after which he will visit Berlin and Vienna. He hopes also to go to Heidelberg and see the work of Erb and Tzerny. More or less sight-seeing will occur between times. Among other things he expects to see the Passion Play. He will return about Sept. 1st.

OPENING OF THE NEW PROVIDENCE HOSPITAL

On Thursday, April 7th, and Saturday, April 9th, the formal opening of the New Providence Hospital in Detroit took place. The first day, April 7th, was for the profession, and many physicians from all parts of the city availed themselves of the opportunity to inspect the new structure. April 9th, the doors were opened to the public and between the hours of 10:00 a. m. and 10:00 p. m. about 2,500 visited the institution.

The new hospital, owned and operated by the Sisters of Charity, is a very spacious structure, occupying the square on the Grand Boulevard between Fourteenth and Wabash Aves. The main entrance is on the Boulevard with two side entrances. one on Fourteenth St. and the other on Wabash Ave. It is a four story brick structure with three wings extending backward. It is magnificent in every detail. The interior plan is as nearly perfect as modern architectural ingenuity could make it. The corridors are large and roomy, extending from end to end of the building as well as along the length of the three wings.

There are one hundred private rooms and about two hundred ward beds. The private rooms are all elegantly furnished; some with adjoining bath are fitted out in the most luxurious style. These will surely meet the exacting demands of the most fastidious; while others are neat and airy and will more than satisfy those in more moderate circumstances.

The operating rooms are on the fourth floor. These are four in number, two of which, equipped with the most modern appliances, are now ready for use.

The elevators are of the Otis self-regulating and self-operating type. These for safety and general usefulness have no equal.

The laundry, boiler and engine rooms are in a separate building and connected with the main building by a tunnel.

The approximate cost is one half million dollars. With such an addition, hospital facilities in Detroit, so long in great demand, will be increased materially.

To the Board of Health, Manistee:

I herewith present my annual Report as follows:

1. No. of Investigations	(a)	Positive...	163
	(b)	Negative ..	489
2. No. of Reports to Lansing.....	(a)	First	256
	(b)	Final	255
3. No. of Reports to Washington.....			52
4. No. of Infectious Diseases.....			312
5. No. of Disinfections			269
6. No. of Houses Placarded			192
7. No. of Sewer Connections.....			21
8. No. of Swine Removals			10
9. No. of Law Suits.....			1

EXPENSES

1. Health Officer.....	$500.00
2. Sanitary Inspector	148.00
3. Formalin.....	57.15
4. Police Officer.....	13.97
5. Medical Inspection	3.00
6. Miscellaneous.....	2.05
Total.....	$724.17

Respectfully

DR. S. SZUDRAWSKI,

Health Officer, Manistee, Michigan.

ALUMNI CLINIC WEEK PROGRAM

Headquarters and Bureau of Information at College Building

HOURS	WEDNESDAY MAY 18	THURSDAY MAY 19	FRIDAY MAY 20	SATURDAY MAY 21
9 to 10	St. Mary's Hospital Dr. W. M. Donald Clinic Tobacco Heart	Harper Hospital Dr. L. J. Hirschman Clinic Quinine and Urea Hydrochloride Anæsthesia in Rectal Surgery	St. Mary's Hospital Dr. F. B. Walker Clinic Fractures	Harper Hospital Dr. Guy L. Kiefer Clinic Diagnosis of Infectious Diseases
10 to 11	St. Mary's Hospital Dr. H. O. Walker Clinic Inguinal Hernia	Harper Hospital Dr. Daniel LaFerte Orthopædic Clinic	St. Mary's Hospital Dr. Chas. Douglas Clinic Results of Improper Feeding of Infants	Harper Hospital Dr. E. L. Shurly Dr. B. R. Shurly Clinic Chronic Bronchitis and Asthma
11 to 1	Dr. James Tyson Philadelphia Clinic Cardio-Renal Disease St. Mary's Hospital	Dr. G. T. Jackson New York Clinic Dermatological Diagnosis Harper Hospital	Dr. Hugh H. Young Baltimore Clinic Genito Urinary St. Mary's Hospital	Dr. S. J. Kopetsky New York Clinic Practical Observations for the General Practitioner, upon Othological Surgery Harper Hospital
3 to 4	St. Mary's Hospital Dr. R. W. Gillman Clinic Sympathetic Opthalmia	Harper Hospital Dr. C. D. Brooks The Appendix—with Specimens —— Dr. W. J. Seymour The Gall Bladder—with Specimens	*Special Car* leaves Griswold and Congress Sts. *at* 2:00 *p. m.* for Pontiac Asylum —— Dr. E. A. Christian Clinic Some points in the Differential Diagnosis of Insanity Complimentary Luncheon	Harper Hospital Dr. Delois L. Parker Therapeutics
4 to 5	St. Mary's Hospital Dr. A. W. Ives Clinic Alcohol	—— Dr. Rolland Parmeter Cancer of the Breast and Cervix—with Specimens		Harper Hospital Dr. E. G. Knill Clinic Arterio-Sclerosis
5 to 6	St. Mary's Hospital Dr. L. Breisacher Clinic Problems of Nutrition	Harper Hospital Dr. F. T. F. Stephenson The Ion in Medicine		Harper Hospital Dr. C. W. Hitchcock Clinic Neurology and Psychiatry
8				Stag Party Guests of Dr. L. J. Hirschman

ALUMNI CLINIC WEEK PROGRAM

Headquarters and Bureau of Information at College Building

HOURS	MONDAY MAY 23	TUESDAY MAY 24	WEDNESDAY MAY 25	THURSDAY MAY 26
9 to 10	Harper Hospital Dr. C. G. Jennings Clinic The Anemias	Harper Hospital Dr. John Bell Clinic Obstetrics and Gynecology	St. Mary's Hospital Dr. F. W. Robbins Clinic Diseases of the Bladder	St. Mary's Hospital Dr. H. W. Yates Clinic Obstetrics and Gynecology
10 to 11	Harper Hospital Dr. J. H. Carstens Clinic Abdominal Surgery	Harper Hospital Dr. Angus McLean Clinic Surgery of the Thyroid	St. Mary's Hospital Dr. S. G. Miner Clinic Rhino-Laryngology	St. Mary's Hospital Dr. David Inglis Clinic The Thyroid
11 to 1	Dr. J. W. Trask Washington Pellagra, illustrated with the stereopticon Harper Hospital	Dr. C. F. Hoover Cleveland Clinic Hepatic Diseases Harper Hospital	Dr. G. R. Pisek New York Pædiatrics St. Mary's Hospital	Dr. T. A. McGraw Clinic Surgical Diagnosis St. Mary's Hospital
3 to 4	Harper Hospital Dr. Joseph Sill Some Observations on Typhoid and Paratyphoid Infections, illustrated	St. Mary's Hospital Dr. T. F. Heavenrich Traumatic Neurasthenia	**2:00 p. m.** Recent Advances in Opsonic and Serum Therapy Staff of Biological Laboratory at Parke, Davis & Co.'s	**1:30 p. m.** Luncheon at Harmonie Hall
4 to 5	Harper Hospital Dr. P. M. Hickey Clinic Bismuth and the Roentgen Ray as Diagnostic Aids in Sinuses and the Gastro Intestinal Tract	St. Mary's Hospital Dr. J. E. Davis Clinic Motility of the Stomach	**3:30 p. m.** Steamer Tashmoo leaves foot of Jos. Campau Ave. for a Lake and River Trip	**3:00 p. m.** Annual Meeting
5 to 6	Harper Hospital Dr. E. H. Hayward Animal Parasites in the Human—with Specimens	St. Mary's Hospital Dr. J. E. Clark New Methods for the Determination of Ammonia in Urine and its Relation to Toxemic Vomiting of Pregnancy		
8	Wayne County Medical Society Dr. J. W. Trask Work of Public Health and Marine Hospital Service Art Museum	Class Reunions Classes of 1870 1890 1875 1895 1880 1900 1885 1905 1910	Dinner on the Boat Guests of Dr. Daniel LaFerte	Commencement Exercises at Light Guard Armory Banquet at Hotel Cadillac

ALUMNI CLINIC WEEK

Detroit College of Medicine

The Annual Clinic Week of the Detroit College of Medicine Alumni Association, will begin Wednesday, May 18th, and will continue until Thursday, May 26th.

The following distinguished men will be present:

May 18—Dr. James Tyson of Philadelphia, will give a clinic on Cardio-Renal disease at St. Mary's Hospital.

May 19—Dr. G. T. Jackson of New York, will give a clinic on Dermatological diagnosis at Harper Hospital.

May 20—Dr. Hugh H. Young of Baltimore, will give a Genito-Urinary clinic at St. Mary's.

May 21—Dr. S. J. Kopetsky of New York, will give some practical observations for the general practitioner on Otological Surgery at Harper.

May 23—Dr. J. W. Trask of the Marine Hospital Service, Washington, will give an illustrated lecture on Pellagra at Harper. In the evening he will address the Wayne Co. Medical Society at the Art Museum, upon the work of the Public Health and Marine Hospital Service.

May 24—Dr. C. F. Hoover, Cleveland, will give a clinic on Hepatic diseases at Harper.

May 25—Dr. G. R. Pisek of New York, will give a clinic on Pediatrics at St. Mary's.

The afternoon of Friday, May 20th, a special car will convey those in attendance upon the clinics to Pontiac Asylum, where Dr. Christian will give a clinic on Differential Diagnosis of Insanity. A Complimentary Luncheon will be served.

Saturday evening Dr. Hirschman will give a stag party.

Reunion of the classes of 1870, 1875, 1880, 1885, 1890, 1895, 1900, 1905, and 1910 will be held Tuesday evening, May 24th.

Wednesday afternoon the Staff of the Biological Laboratory at Parke, Davis & Company's will demonstrate recent advances in Opsonic Therapy. At 3:30 a boat ride on the lake and river—Steamer Tashmoo. Dinner on the boat, guests of Dr. Daniel La Ferte.

Thursday afternoon May 26, Luncheon at Harmonie Hall, at 1:30. Annual Meeting Alumni Assocation 3:30. Commencement exercises at Light Guard Armory in the evening, and banquet at Hotel Cadillac.

CORRESPONDENCE

To the Editor:

In the news items of the January number of the JOURNAL, you have announced my location as Jackson, Mich. Will you please correct the error. My address is Lansing, which is my home city. I have been inconvenienced somewhat by mail being sent to wrong address.

Thanking you kindly in advance, I am cordially

J. EARL MCINTYRE.

MICHIGAN STATE BOARD OF REGISTRATION IN MEDICINE

Additional Registrations in Michigan.

Name and Address	College and Year	Qual. 1. Recip.	Qual. 2 Recip.	Date of License
Dill, Lawrence L., Ann Arbor, Mich.	Homeo. Coll. Univ. of Mich., 1910	Exam.		1-7-10
McCann, Joseph H. Stockbridge, Mich.	do.	Exam.		2-9-10
Fenstermacher, Clark H., Sargent, Mich.	Univ. of Louisville Kentucky, 1900		No. 2 Nebraska,	3-15-10
Larson, Harry J., Iron River, Mich.	Saginaw Valley Med, Coll., Mich., 1900		No. 2 Wisconsin	3-15-10
Mason, Stephen C., Menominee, Mich.	Rush Med. College, 1905	No. 1, Illinois		3-15-10
Carr, John R., Detroit, Mich.	Med. Dept., Johns Hopkins Univ., 1904	No. 1, No. Carolina		3-31-10
Ely, Joseph D., Hudson, Mich.	Detroit, Med. Coll., 1884		No. 2 Ohio	4-2-10
Pennington, Benjamin S., Vassar, Mich.	Keokuk Med. Coll., 1891		No. 2 Iowa	do.
Klein, Julius J., Detroit, Mich.	Dept. Med. & Surg., Univ. of Mich., 1892		No. 2 Ohio	do.

BOOK NOTICES

An English Handbook of the Paris Medical School with map. A. A. Warden, M. D., second edition. Philadelphia, P. Blakiston's Son & Co., 1910. Price, paper, 50 cents.

This is a little paper-covered volume of 52 pages devoted to a short discussion of Medical study abroad, and then to a guide to the clinics of Paris, with a list of the hospitals, and a short sketch of each, and their staff.

Diseases of the Genito-Urinary Organs. Considered from a medical and surgical standpoint including a description of Gonorrhea in the female and conditions peculiar to the female urinary organs. By Edward L. Keyes Jr., M. D., Ph. D., Clinical Professor of Genito-Urinary Surgery, New York Polyclinic Medical School; Surgeon to St. Vincent's Hospital; Lecturer on Surgery Cornell University Medical School. With 195 illustrations in the text and seven plates, four of which are colored. New York and London: D. Appleton & Co. Cloth, $6.00 net.

The above mentioned work is not another edition of the original Keyes' work, but is an entire new work by Dr. Edward L. Keyes, Jr., who has given to his father due recognition for valuable service rendered throughout the work. Other assistants to Dr. Keyes are Dr. Chetwood and Drs. B. S. Barringer and E. D. Barringer, also Dr. T. S. VanRiempst.

The work contains nine hundred and seventy-five pages, is profusely illustrated with several large plates all perfectly witnessed. The frontispiece contains fifteen cystoscopic views of abnormal conditions, which must prove a great help in cystoscopic work. The various subjects throughout the book are handled with skill and clearness. Much attention is given to examinations and useful hints are numerous and frequent throughout the book.

In the chapter by Dr. E. D. Barringer will be found many hints useful in the treatment of Gonorrhea as appears in the female sex. Her chapter is refreshing, with many new ideas. It presents the subject in a line different from which it has been heretofore handled.

To the practitioner interested more in practical results than in ultra-scientific investigation this book with its numerous illustrations will appeal with especial force while the text, which has the virtue of logic and clearness without being prolix, leaves little to be desired in the reference sought.

The work is complete, giving as marked attention to chronic as to acute conditions, and all phases of the subject covered by the title of the book are systematically and conscientiously handled. Much attention is paid to the medical side of the cases, although some chapters of the surgical treatment are gathered in the back of the book. Dr. Keyes is to be congratulated on the scope of the work, choice of collaborators and style and arrangement of the subjects. We bespeak of this work a continued recognition by all who are familiar with Keyes' works on the same subject and to those who are unfamiliar we would recommend this book as one of the best.

Nutrition and Dietetics. A manual for students of medicine, or trained nurses, and for dieticians in hospitals and other institutions, by Winfield S. Hall, Ph. D., M. D., Professor of Physiology, Northwestern University Medical School; Lecturer on Physiology and Dietetics in Mercy Hospital and Wesley Hospital, Chicago. New York and London: D. Appleton & Company, 1910. Cloth, $2.00 net.

Part one of this book is devoted to a discussion of the natural foods, and a comprehensive classification of foods, giving many tables of the composition of various foods, and a chapter on preparation of foods.

Part two deals with the physiology of digestion and assimilation of foods, and the excretory function.

Parts three and four are devoted to diet in health and disease, giving much space to artificial feeding, rectal feeding, and the preparation and selection of proper foods for various disease conditions. Menus are given and thoroughly discussed.

A comprehensive addendix is added. The style of the text is free and easy, very clear and a pleasure to read. Like so many of Appleton's books the paper is of excellent quality, and the print clear and of good size.

The Sexual Life of Woman in its Physiological, Pathological and Hygienic Aspects, by E. Heinrich Kisch, M. D., Professor of the German Medical Faculty of the University of Prague; Physician to the Hospital and Spa of Marienbad; Member of the Board of Health. Only authorized translation into the English language from the German by M. Eden Paul, M. D. With 97 illustrations in the text. New York: Rebman Company, 1123 Broadway. $5.00 net.

This book was originally written in German. The translation however, is free, and the English reader will not often be reminded of its foreign genesis. The text is largely a compilation of quotations from other authors, interspersed with numerous tables of statistics. The subject is one that will appeal to the morbid sensibilities of many readers, but the practical usefulness of the book must remain in doubt. The reviewer finds less that is new in the work than he does of quotations from writers on Physiology, Gynecology and Obstetrics, or of Folk lore and primitive customs and practices.

International Clinics, a quarterly of Illustrated Clinical Lectures and especially prepared Original Articles, Vol I, Twentieth series, 1910, Philadelphia and London: J. B. Lippincott Co., 1910.

The series for this year will surpass the previous ones. The first volume contains many interesting articles on such subjects as "Serum Diagnosis of Syphilis," "Symptomatology," and "Treatment of Pellagra," "Addition to our knowledge of Purin Metabolism and its Bearing on the Problems of Gout," "Bismuth Paste in Chronic Suppuration," and many others.

Williams of Edinborough, has an article on the Rational Treatment of Tabes Dorsalis, which is really hopeful. He urges the use of mercury and that hypodermically.

Blackburn of Kentucky, discusses the Post Graduate study advised by the American Medical Association.

The last third of the book is given up to miscellaneous progress of Medicine, Surgery and Therapeutics during the year, conducted by such men as Musser, Tuttle, Stevens and Bloodgood.

It is a book of 300 pages with numerous plates and illustrations.

***Progressive Medicine.* A quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., and H. P. M. Laudi, M. D., Lea & Feibger, Philadelphia, and New York, No. 1, 1910.**

This number of *Progressive Medicine* contains six chapters, on "Surgery of the Head, Neck and Thorax." "Infectious Diseases," John Rürah; "Diseases of Children," Floyd M. Crandall; "Rhinology and Laryngology," D. Braden Kyle; and "Otology," Arthur B. Dûel.

About as many fanciful procedures as usual have been proposed during the past year, as witness the following mentioned in the articles on the Thyroid Gland:

Stuart-Low recommends the removal of the thyroid as a palliative measure in cancer. In five cases in which this was done the primary growth ceased enlarging, the nodes became softer, and less painful, and the patients gained in weight.

Kanaral has had two cases of Dementia Præcox in the early stage greatly improved by Thyroidectomy, and as the disease is so hopeless believes further experimentation should be done.

The department of infectious diseases is valuable, collecting and discussing as it does all the advances reported during the year, especial attention being given to Chantemesse's Ophthalmic test for Typhoid and to Anti-typhoid inoculation.

The various methods of digital enucleation of the tonsil are given, with a concise description of the technique. The claims for this method are: 1, Rapidity of operation; 2, Absolute nonrecurrence if removed in capsule; 3, Minimun amount of hemorrhage, and 4, Ease of performance.

The Propaganda for Reform in Proprietary Medicines; Sixth Edition: Containing the various exposes of nostrums and quackery which have appeared in the *Journal of the American Medical Association*. Price, paper, 10 cents; cloth, 35 cents. Pp. 292. Illustrated.

This book presents in convenient form most of the exposures that have appeared in *The Journal of the American Medical Association* showing fraud either in the composition of various proprietary preparations or in the claims made for such preparations. Not all of the products dealt with, however, are such as are—or have been—used by the medical profession. Many preparations of the "patent medicine" type have been subjected to analysis and the results of such examinations appear in this volume. The book will prove of great value to the physician in two ways: 1, It will enlighten him as to the value, or lack of value, of many of the so-called ethical proprietaries on the market; and 2, It will put him in a position to answer intelligently questions that his patients may ask him regarding the virtues (?) of some of the widely advertised "patent medicines" on the market. After reading the reports published in this book physicians will realize the value and efficiency of simple scientific combinations of U. S. P. and N. F. preparations as compared with many of the ready-made, unstable and inefficient proprietary articles.

New and Nonofficial Remedies, 1910: Containing descriptions of articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to Jan. 1, 1910. Paper. Price, paper 25 cents; cloth 50 cents. Pp. 256.

This is the 1910 edition of the annual New and Nonofficial Remedies, issued by the Council on Pharmacy and Chemistry of the American Medical Association, and contains descriptions of all articles approved by the Council, up to Dec. 31, 1909. There are also descriptions of a number of unofficial non-proprietary articles which the Council deemed of value. The action, dosage, uses and tests of identity, purity and strength of all articles are given. As an illustration of the scope of the book, attention is called to the following: The articles on arsanilic acid and its derivatives, page 35; on phenolphthalein, page 152, and on epinephrine, page 73

indicate the effort which the Council is making to have new remedies known by their correct names. The description of medicinal foods, page 120, should put physicians on their guard as to the small value of such products. Particular attention is called to the description of serums and vaccines, page 169. Since our knowledge of the therapeutic value of new remedies is still largely in the experimental stage, the statements which appear under each proprietary article are based largely on the claims made by those interested. On the other hand, on page 56, under creosote carbonate, is a note on the claims of non-toxicity often made for certain remedies. A similar caution in reference to the claimed harmlessness of intestinal antiseptics appears on page 41 under beta-naphthol benzoate.

Handbook of Therapy. Cloth. Price, $1.50. Pp. 421. Chicago: American Medical Association, 1910

The Therapeutic Department in *The Journal of the American Medical Association* has been commented on so often and so favorably that the Association decided to reprint, in book form, the articles which seemed to be of most practical value to the general practitioner. Conditions governing therapeutic requirements are stated as clearly and concisely as possible. Special care has been taken to avoid unusual drugs, and with rare exceptions the formulas given are combinations which can be easily compounded by any pharmacist.

Besides the articles on therapy, the book contains a list of the articles accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies, as well as tables and compilations of miscellaneous data.

The book is of convenient size for the pocket or the satchel.

A Treatise on Diseases of the Nose, Throat and Ear. By William Lincoln Ballenger, M. D., Professor of Laryngology, Rhinology and Otology in the College of Physicians and Surgeons, Chicago. New (2d) edition, thoroughly revised. Octavo, 930 pages, with 491 engravings, mostly original, and 17 colored plates. Cloth, $5.50, net. Lea & Febiger, Philadelphia and New York. 1909.

The rapid acceptance by the profession of the first edition of this work affords a very practical testimonial to its worth. A second edition has been demanded within a year, and so have given the author an opportunity to make such additions as necessary to bring the work up to the present.

The style of the book is very pleasing. The author has not been content with the recital of generalities, but treats his subject with the most careful attention to detail throughout the book. No written description of operative procedures necessitating such delicate technique as the various operations upon the nose, throat, and ear, can suffice to make such procedures clear. Many excellent and original illustrations have been inserted in many instances, illustrating the operations step by step in such a manner as to make such a presentation of the subject that it at once impresses and delights the reader. The work may be regarded as a combined text book and atlas.

One realizes in reading the book the passing of that type of practice that dealt with the temporary relief of symptoms, and kept the patient in continual attendance on the Specialist to receive his "treatments." The author advocates the radical removal of the difficulties by sound surgical measures, such as would be instituted by a competent surgeon for any other part of the body, and so keeps pace with the great advances made in surgery in other fields.

Chapters dealing with the Vicious Circle in the nose and its surgery, are especially interesting. The one theme that is impressed on the reader, more than any other throughout the book, is the relief of obstruction and the establishment of drainage, the great surgical principle upon which so many conditions depend.

The profession has long since wearied of the Spray Specialist, and demands that a wider view be taken of these cases sent for consultation, than that which condemns them to eternal tinkering, rather than radical surgical measures to make for a cure.

Dr. Ballenger's book is a sermon along these lines; it sounds a note of progress toward the higher ground.

Clinical Examination of the Urine and Urinary Diagnosis. By J. Bergen Ogden, M. D., Medical Chemist to the Massachusetts Life Insurance Company, New York Cloth, 427 pages, illustrated. Third Edition, revised. Philadelphia: W. B. Saunders Company, 1910. Price $3.00 net.

As the title indicates this book is much more than a simple manual of urinary analysis. A third of the volume is given up to a discussion of the various conditions in which the urine is of importance, thus supplementing the analytical portion. The book first appeared in 1900, and the second edition in 1902. It has been carefully revised, some of the matter discussed in the earlier editions which experience has proven of little value, has been omitted. New sections, particularly one on life insurance examinations, have been added.

SURGERY

Conducted by

R. E. BALCH, M. D., Kalamazoo, Michigan

Pseudo-Jejunal Ulcer—In order to determine if possible, if jejunal ulcer is a condition secondary to gastro-jejunostomy, W. J. Mayo, in the March number of *Surgery, Gynecology and Obstetrics*, gives the result of his investigations of all cases of gastro-jejunostomy performed at St. Mary's Hospital. There were in all 1141 cases. Of the entire number, as far as could be ascertained, not one developed a true jejunal ulcer, nor have any cases come to their clinic showing jejunal ulcers following gastro-jejunostomy done by other surgeons.. The author quotes Herbert Patterson who has tabulated 52 cases of jejunal ulcer. Dr. Patterson points out that in nearly one-third of the cases of ulcer following gastro-enterostomy, the lesion was at the line of anastomosis between stomach and jejunum. A further study of the reported cases leads the author to the conclusion that ulcer of this type is due to technical errors in operation rather than to unavoidable conditions. Ulcers situated at the line of anastomosis he classes as gastro-jejunal or pseudo-jejunal ulcers. In conclusion Dr. Mayo reports three cases of this type.

CASE 1

In 1899 Dr. Mayo operated upon a patient with pyloric obstruction due to calloused ulcer at the pyloris obstructing the canal. An anterior gastro-jejunostomy was performed. The button was not passed. The patient gained thirty pounds in weight and was much improved in health for three years and nine months. She was then taken with a sudden attack of abdominal distress diagnosed as appendicitis. A tender mass could be palpated just at the right of the umbilicus. A laparotomy revealed a mass of adhesions attached to the abdominal wall and surrounding an ulcer which had perforated the stomach immediately above and to the right of the gastro-jejunostomy opening. The ulceration began at the site of the anastomosis involving mucous membrane of both stomach and jejunum. During the operation, the button which had not been passed, was dislodged by the manipulation and was removed from the stomach. When passed downward into the site of the gastro-jejunostomy, the button was found to fit closely into the site of the ulcer. The ulcer was excised and a large gastro-jejunostomy was done over a Robson bone bobbin.

CASE 2

This patient gives a history of gasto-enterostomy performed seven months previous, which gave temporary relief but later developed pain, tenderness and occasional bile vomiting. A laparotomy revealed dense adhesions about the site of the gastro-jejunostomy uniting a nine inch loop to the posterior wall of the stomach. On the anterior margin of the anastomosis, a thickened spot was found covered by recent adhesions and having the appearance of a perforation. The stomach was opened just above the line of anastomosis exposing an ulcer with a thickened base in the line of union. The floor of the ulcer was hard and smooth but a projection was seen which proved to be a silk suture in communication with the gastro-intestinal cavity. The suture was removed, the ulcer excised and a large plastic gastro-jejunostomy was done at the site of the opening A suture enterostomy was done between the limbs of the jejunum and the pyloric ring excised. Two years later the patient was in good health.

CASE 3

The history was very similar to the previous case and upon laparotomy an ulcer was found upon the line of gastro-jejunostomy extending into the fatty tissue of the meso-colon. This as at the point of a hematoma formed at the previous operation by pricking a vein in the meso-colon. The whole of the gastro-jejunostomy opening together with the ulcer was excised and the stomach and jejunal opening completely closed. A large Finney gastro-jejunostomy was then done at the site of the original duodenal ulcer which had healed and contracted down. Recovery.

GYNECOLOGY AND OBSTETRICS

Conducted by

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The Treatment of Cancer of the Cervix Uteri—Cuthbert Lockyer of the Samaritan Hospital, London, contributes an important article on the results of the campaign against cancer of the uterus. He believes, and rightly so, that cancer of the womb is the most important subject in the whole realm of gynecology, because of its frequency and because it is often overlooked until too late for radical measures. In Welch's statistics comprising over 31,000 cases of cancer, the uterus was first in the list of organs most frequently affected by primary cancer one-third of all primary growths originating in that organ. Nearly all practitioners see two or three cases yearly. Roger Williams of Bristol, estimates that the disease is four times as common as it was 50 years ago.

The first serious crusade against this form of cancer was made by Professor George Winter in East Prussia, in 1902. The plan of campaign was as follows: There were issued to each doctor a brochure, to each midwife a circular and to each newspaper a "word of advice to womankind." Each operating gynecologist was requested to register all of his cases. Of the 84 cases collected during the next year, 45 came under observation through the family doctor. In five instances these men had not made an examination and the disease was ultimately discovered by other observers. In 11 per cent of the cases, therefore, the physicians had not followed Winter's advice. There was, however, a far greater response to his appeal to have portions of suspicious cervix and curettings sent to the laboratory for microscopic diagnosis. Twenty-five specimens were received, of which five proved to be carcinoma. Seven midwives had had cases and only one proved negligent. Winter figures out, that as a result of the newspaper campaign the number of operable cases rose from 62 to 74 per cent.

The Council of the British Medical Association took up this work in 1908 and has issued two appeals, one to the physicians and one to the nurses and midwives. Twenty-five thousand of the latter leaflets have been distributed.

There are three classes of individuals concerned in any successful attempt to cope with uterine cancer, the patients, the family doctor and the specialist. As far as the patients are concerned it is not too much to say that not one woman in a thousand appreciates the significance of irregular hemorrhage. The family doctor has been much blamed for not making earlier diagnoses, but Lockyer thinks, from his experience, unjustly so. Yet it is necessary to again and again repeat that irregular bleeding is not a symptom of the menopause; that it means something abnormal and always demands a most careful examination.

Lockyer then takes up the question of the radical Wertheim operation and shows what an improvement in statistics has followed the more general adoption of this method of treatment.—*The Practitioner*, January, 1910.

Pelvic Transplantation Metastasis as a Means of Recognition of Hopeless Abdominal Carcinomata—Palmer points out that it is just as important to have rules for guidance against operation as it is for operation, and calls attention to the necessity of making rectal digital examinations with the patient in the knee-elbow position, and bi-manual rectal examinations in the lithotomy position in all cases of carcinoma of the upper abdomen.

He reviewed the histories of 435 patients with upper abdominal carcinoma at the Mayo Clinic and found six and one-half per cent showing a hard, nodular mass at a point from three to five inches from the anus on the anterior rectal wall. These nodules are usually located above the prostate in the male and above and behind the uterus in the female. They may be single or multiple and vary in size from a small bean to an orange. Sigmoidoscopic examination shows the rectal mucosa uninvolved. Symptoms suggestive of rectal carcinoma do not occur. These implantation growths are often found before free fluid can be made out, and before secondary growths can be felt through the abdominal wall.

The occurrence of these growths in this position is to be accounted for by gravity, the cells lodging upon the rectum as upon a shelf. Their presence is a positive contraindication to operation.—*Surg., Gyn. and Ob.*, February, 1910.

PROCTOLOGY

Conducted by
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A New Method for Attempting to Secure Sphincteric Control After Colostomy—Charles Ryall in the *London Lancet*, July 3rd, 1909, states that the lack of sphincteric control is a great drawback to those who have to submit to a permanent colostomy. Many operations have been devised and carried out in order to get over this difficulty. Some of these have been found faulty and others too complicated. The rectus abdominis is generally a well developed muscle and remains fairly so in the majority of cases, until advanced emaciation is reached. Taking advantage of this fact, Howse performed a colostomy by spliting the rectus vertically and laterally and bringing the bowel through this oblique opening. This was performed with the hope of producing sphincteric control. The Mydl-Rectus operation of inguinal colostomy, where the layers of muscle were split and not divided, was improvement on these as far as sphincteric control was concerned. All these operations were faulty, and this was in a great measure due to the spur operation being carried out and the difficulty of compressing and controlling the bulky spur. Since then Schinzinger, Braun, Weir, and others have dispensed with the spur by dividing the bowel, closing and dropping the lower segment into the abdomen, and trying to gain some sphincteric control over the upper segment by various operations more or less complicated. It is undoubtedly easier to control the upper segment than to attempt to do so with a spur. Recently Arbuthnot Lane has drawn attention to the advantage of drawing the upper segment through the rectus in those cases where the lower segment is either removed or else closed and dropped back into the abdomen. The rectus is a well developed muscle and enables a good deal of control to be kept over a colostomy where the fibres are split vertically, but full advantage has not been taken of the value of this muscle as a means of making an artificial sphincter.

The method which Ryall has resorted to is as follows: The rectus is split vertically and the sigmoid is drawn out and divided at a convenient point. The lower segment is closed and replaced in the abdomen. The upper segment is made less bulky by removing the appendices epiploicæ and freeing it of mesenteric fat, but without in any way interfering with its blood-supply. The artificial fibres are separated from the posterior aspect of the rectus on either side of the wound. Each loop is then drawn over to the opposite side of the wound, so that one loop overlaps the other. The overlapping loops thus form a ring and through this the bowel segment is drawn. Sutures are then inserted to keep the muscle fibres together above and below where the bowel comes through. Anchoring stitches are inserted through the skin and muscle inside to keep the bowel in position. The wound is then closed above and below the bowel and the cut edges of the latter are sutured to the skin. A double sphincter is thus formed, consisting of longitudinal and circular fibres. The longitudinal fibres are those of the anterior portion of the rectus and the circular fibres are formed by the loops from the posterior part of the rectus. This operation can be modified by making double loops on each side and making them overlap one another alternately. A similar operation can be, and has been, carried out through the external oblique, and likewise can be done wherever the bowel is brought through muscle. A somewhat similar operation can be performed for gastrostomy and appendicostomy.

Some Remarks on the Development and Anatomy of the Lower End of the Rectum, with a View of Supplying Our Conception of Malformation and Disease—J. E. Thompson in the *Texas State Journal*, for October, 1909, states that in the three lectures by Keith on malformations of the hind end of the body the theory (strongly supported by comparative anatomy and embryology) is advanced that in the course of development, the rectum successively changes its position. In the very early embryonic condition it opens into the upper end of the embryonic cloaca, and the urinary and genital ducts open behind and below it. Later on the position changes and it opens above and in front of it. As the development proceeds the opening occupies successive positions lower down the posterior wall of the primitive cloaca until it comes to the neighborhood of the perineum. At this stage the opening into the cloaca is lost and an epiblastic pitting-in occurs from the perineum (proctodeum) into the upper end of which the rectum eventually opens.